ORDER NO. KM40801513CE
F13

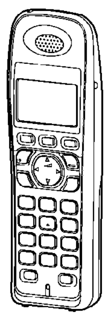
Service Manual

Telephone Equipment

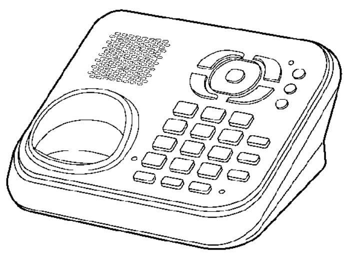
Caller ID Compatible

DECT 6.0

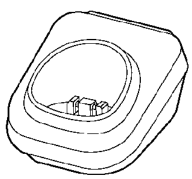
Model No. KX-TG9341T
KX-TG9342T
KX-TG9343S
KX-TG9343T
KX-TG9344T
KX-TGA931S
KX-TGA931T



KX-TGA931S/T
(Handset)



KX-TG9341S/T
(Base Unit)



(Charger Unit)

Expandable Digital Cordless Answering System
Pearl Silver Version
Titanium Black Version
(for U.S.A.)

Configuration for each model

Model No	Base Unit	Handset	Charger Unit	Expandable
KX-TG9341	1 (TG9341)	1 (TGA931)		Up to 6
KX-TG9342	1 (TG9341)	2 (TGA931)	1	Up to 6
KX-TG9343	1 (TG9341)	3 (TGA931)	2	Up to 6
KX-TG9344	1 (TG9341)	4 (TGA931)	3	Up to 6

* For the optional accessory (KX-TGA930), refer to KX-TH1201/1211/1212 service manual.

Panasonic

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

IMPORTANT INFORMATION ABOUT LEAD FREE, (PbF), SOLDERING

If lead free solder was used in the manufacture of this product, the printed circuit boards will be marked PbF. Standard leaded, (Pb), solder can be used as usual on boards without the PbF mark.
When this mark does appear, please read and follow the special instructions described in this manual on the use of PbF and how it might be permissible to use Pb solder during service and repair work.

- When you note the serial number, write down all 11 digits. The serial number may be found on the bottom of the unit.
- The illustrations in this Service Manual may vary slightly from the actual product.

Note for TABLE OF CONTENTS:
Because sections 5, 6 and 7 of this manual are extracts from the operating instructions for this model, they are subject to change without notice. You can download and refer to the original operating instructions on TSN Server for further information.

TABLE OF CONTENTS

1 Safety Precautions

1.1. For Service Technicians

- **Repair service shall be provided in accordance with repair technology information such as service manual so as to prevent fires, injury or electric shock, which can be caused by improper repair work**.
  1. When repair services are provided, neither the products nor their parts or members shall be remodeled.
  2. If a lead wire assembly is supplied as a repair part, the lead wire assembly shall be replaced.
  3. FASTON terminals shall be plugged straight in and unplugged straight out.

- **ICs and LSIs are vulnerable to static electricity.**
  When repairing, the following precautions will help prevent recurring malfunctions.
  1. Cover plastic parts boxes with aluminum foil.
  2. Ground the soldering irons.
  3. Use a conductive mat on worktable.
  4. Do not grasp IC or LSI pins with bare fingers.

2 Warning

2.1. Battery Caution

1. Danger of explosion if battery is incorrectly replaced.
2. Replace only with the same or equivalent type recommended by the manufacturer.
3. Dispose of used batteries according to the manufacturer's Instructions.

2.2. About Lead Free Solder (PbF: Pb free)

Note:

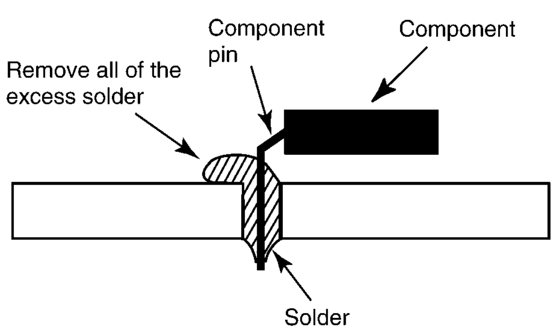
In the information below, Pb, the symbol for lead in the periodic table of elements, will refer to standard solder or solder that contains lead.

We will use PbF solder when discussing the lead free solder used in our manufacturing process which is made from Tin (Sn), Silver (Ag), and Copper (Cu).

This model, and others like it, manufactured using lead free solder will have PbF stamped on the PCB. For service and repair work we suggest using the same type of solder.

Caution

- PbF solder has a melting point that is 50 °F ~ 70 °F (30 °C ~ 40 °C) higher than Pb solder. Please use a soldering iron with temperature control and adjust it to 700 °F ± 20 °F (370 °C ± 10 °C).
- Exercise care while using higher temperature soldering irons.:
  Do not heat the PCB for too long time in order to prevent solder splash or damage to the PCB.
- PbF solder will tend to splash if it is heated much higher than its melting point, approximately 1100 °F (600 °C).
- When applying PbF solder to double layered boards, please check the component side for excess which may flow onto the opposite side (See the figure below).

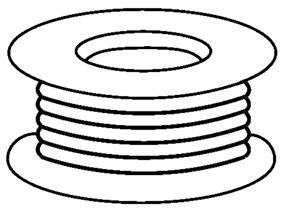
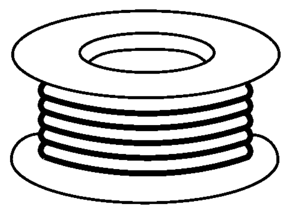
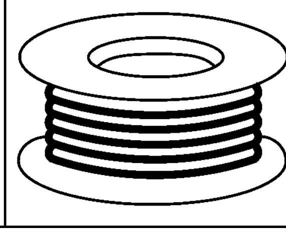


(Slice View)

2.2.1. Suggested PbF Solder

There are several types of PbF solder available commercially. While this product is manufactured using Tin, Silver, and Copper (Sn+Ag+Cu), you can also use Tin and Copper (Sn+Cu), or Tin, Zinc, and Bismuth (Sn+Zn+Bi). Please check the manufacturer's specific instructions for the melting points of their products and any precautions for using their product with other materials.

The following lead free (PbF) solder wire sizes are recommended for service of this product: 0.3 mm, 0.6 mm and 1.0 mm.

0.3 mm X 100 g	0.6 mm X 100 g	1.0 mm X 100 g
		

2.3. Discarding of P. C. Board

When discarding P. C. Board, delete all personal information such as telephone directory and caller list or scrap P. C. Board.

3 Specifications

■ **Standard:**
DECT 6.0 (Digital Enhanced Cordless Telecommunications 6.0)

■ **Number of channels:**
60 Duplex Channels

■ **Frequency range:**
1.92 GHz to 1.93 GHz

■ **Duplex procedure:**
TDMA (Time Division Multiple Access)

■ **Channel spacing:**
1,728 kHz

■ **Bit rate:**
1,152 kbit/s

■ **Modulation:**
GFSK (Gaussian Frequency Shift Keying)

■ **RF transmission power:**
115 mW (Max.)

■ **Voice coding:**
ADPCM 32 kbit/s

	Base Unit	Handset	Charger
Power source	AC Adaptor (PQLV207T, 120 V AC, 60 Hz)	Rechargeable Ni-MH battery AAA (R03) size (1.2 V 630 mAh)	AC Adaptor (PQLV209T, 120 V AC, 60 Hz)
Receiving Method	Super Heterodyne	Super Heterodyne	——
Oscillation Method	PLL synthesizer	PLL synthesizer	——
Detecting Method	Quadrature Discriminator	Quadrature Discriminator	——
Tolerance of OSC Frequency	13.824 MHz ±100 Hz	13.824 MHz ±100 Hz	——
Modulation Method	Frequency Modulation	Frequency Modulation	——
ID Code	40 bit	40 bit	——
Ringer Equivalence No. (REN)	0.1B	——	——
Dialing Mode	——	Tone (DTMF)/Pulse	——
Redial	——	Up to 48 digits	——
Speed Dialer	——	Up to 32 digits (Phonebook)	——
Power Consumption	Standby: Approx. 0.9 W Maximum: Approx. 3.4 W	11 days at Standby, 5 hours at Talk	Standby: Approx. 0.3 W, Maximum: Approx. 2.9 W
Operating Conditions	5 °C - 40 °C (41 °F – 104 °F) 20 % – 80 % relative air humidity (dry)	5 °C - 40 °C (41 °F – 104 °F) 20 % – 80 % relative air humidity (dry)	5 °C - 40 °C (41 °F – 104 °F) 20 % – 80 % relative air humidity (dry)
Dimensions (H x W x D)	Approx. 70 mm × 150 mm × 136 mm (2 3/4" × 5 29/32" × 5 11/32")	Approx. 156 mm × 49 mm × 32 mm (6 1/8" × 1 15/16" × 1 1/4")	Approx. 51 mm × 75 mm × 88 mm (2 " × 2 15/16" × 3 15/32")
Mass (Weight)	Approx. 290 g (0.64 lb.)	Approx. 130 g (0.29 lb.)	Approx. 60 g (0.13 lb.)

Note:
- Design and specifications are subject to change without notice.

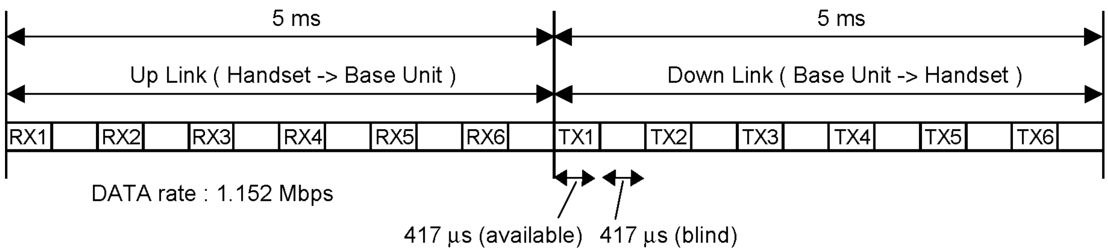
Note for Service:
- **Optional headset:** KX-TCA60, KX-TCA86, KX-TCA92, KX-TCA93, KX-TCA94, KX-TCA95

4 Technical Descriptions

4.1. US-DECT Description

The frequency range of 1.92 GHz-1.93 GHz is used. Transmitting and receiving carrier between base unit and handset is same frequency. Refer to **Frequency Table** (P.77).

4.1.1. TDD Frame Format

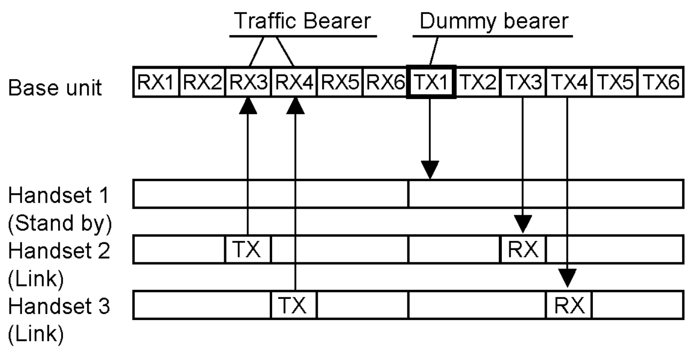


4.1.2. TDMA system

This system is the cycles of 10 ms, and has 6 duplex paths, but maximum duplex communication path is 5 because of dummy bearer use.

In 1 slot 417 µs, the 10 ms of voice data is transmitted.

• **2 - Handsets Link**



Traffic Bearer

A link is established between base unit and handset.

The state where duplex communication is performed.

Handset doesn't make up duplex in no free RF channels because of interference. (*1)

Dummy Bearer

Base unit sends Dummy-data to the all stand-by state handsets.

Handsets receive that data for synchronization and monitoring request from the base unit.

Base unit doesn't send Dummy bearer in no free RF channels because of interference. (*1)

Note:

(*1) It is a feature under FCC 15 regulation and for interference avoidance.

In the case of checking RF parts, it is better in least interference condition.

4.1.3. Signal Flowchart in the Radio Parts

Reception

A voice signal from TEL line is encoded to digital data "TXDATA" by DSP (IC501) in a base unit.
Then TXDATA goes to RF PART, and it's modulated to 1.9 GHz. The RF signal is amplified and fed to a selected antenna.

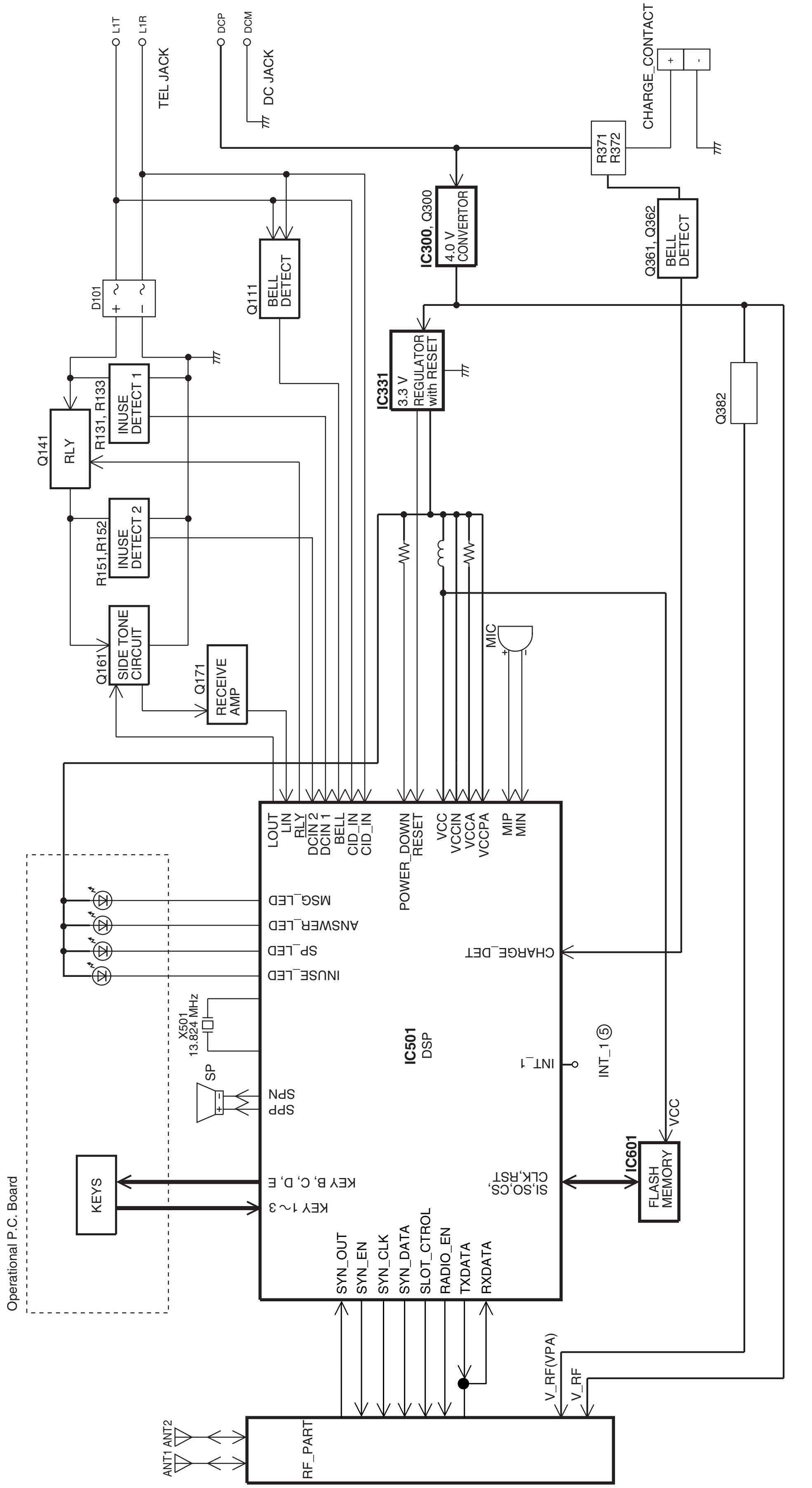
As for a handset RF, RF signal is received in two antennas.
RFIC (IC701) compares RF signal levels and selects the antenna to be used. Then RFIC down-converts to 864 kHz IF signal from RX signal in the selected antenna, and demodulates it to digital data "RXDATA".
DSP (IC501) converts RXDATA into a voice signal and outputs it to speaker.

Transmission

A voice signal from microphone is encoded to digital data "TXDATA" by DSP (IC501) in a handset.
Then TXDATA goes to RF PART, and it's modulated to 1.9 GHz. The RF signal is amplified and fed to a selected antenna.

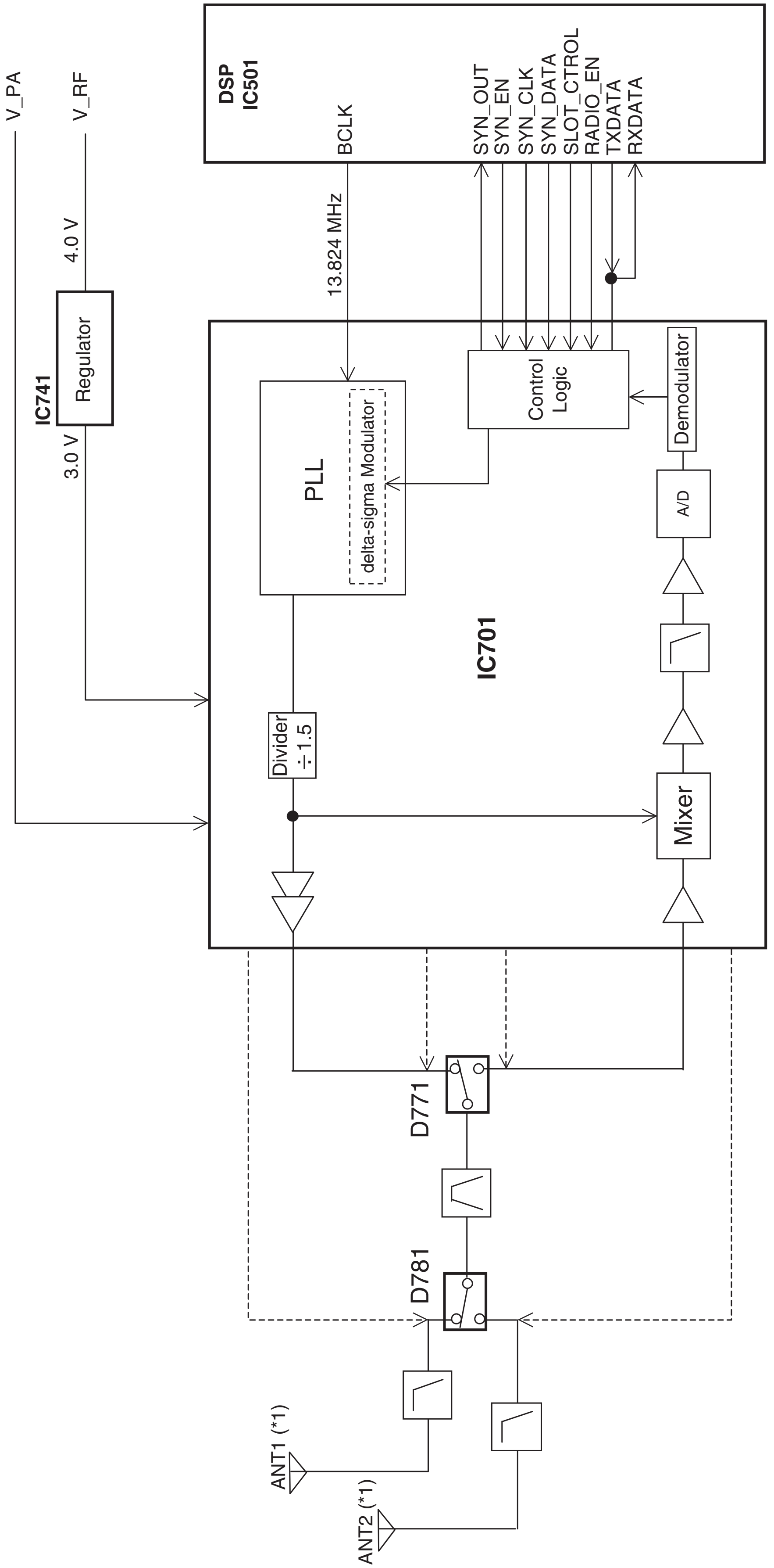
As for a base unit RF, RF signal is received in two antennas.
RFIC (IC701) compares RF signal levels and selects the antenna to be used. Then RFIC down-converts to 864 kHz IF signal from RX signal in the selected antenna, and demodulates it to digital data "RXDATA".
DSP (IC501) converts RXDATA into a voice signal and outputs it to TEL line.

4.2. Block Diagram (Base Unit_Main)



KX-TG9341/9342/9343/9344 BLOCK DIAGRAM (Base Unit_Main)

4.3. Block Diagram (Base Unit_RF Part)



KX-TGTG9341/9342/9343/9344 BLOCK DIAGRAM (Base Unit_RF Part)

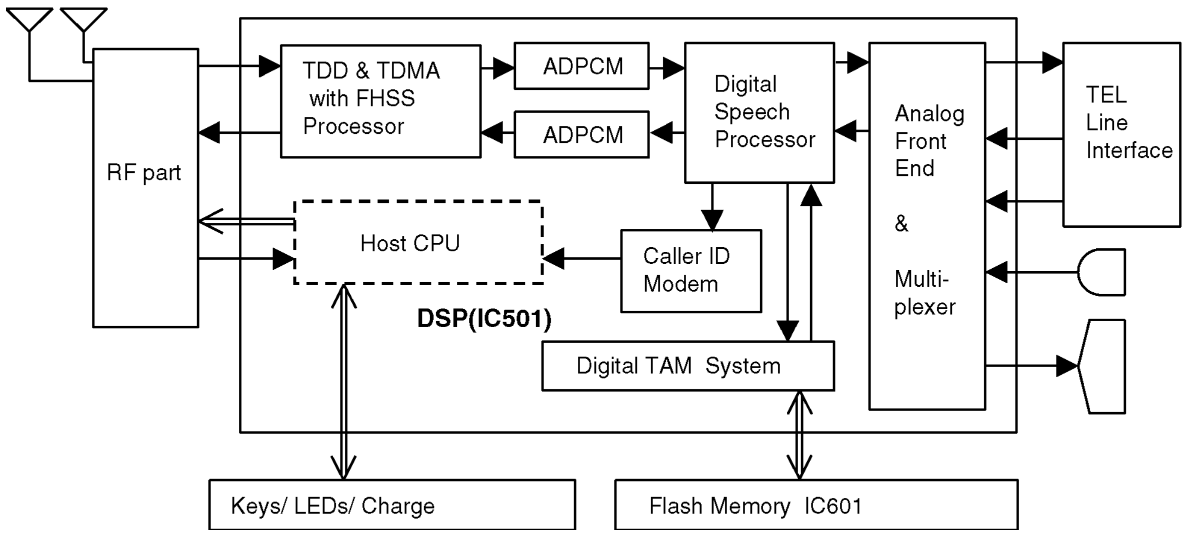
Note:
(*1) Antenna Type: wired dipole antenna

4.4. Circuit Operation (Base Unit)

General Description:

(DSP, Flash Memory) is a digital speech/signal processing system that implements all the functions of speech compression, record and playback, and memory management required in a digital telephone answering machine.

The DSP system is fully controlled by a host processor DSP. The host processor provides activation and control of all that functions as follows.



4.4.1. DSP (Digital Speech/Signal Processing: IC501)

- **Voice Message Recording/Play back**
  The DSP system uses a proprietary speech compression technique to record and store voice message in Flash Memory.
  An error correction algorithm is used to enable playback of these messages from the Flash Memory.
- **DTMF Generator**
  When the DTMF data from the handset is received, the DTMF signal is output.
- **Synthesized Voice (Pre-recorded message)**
  The DSP implements synthesized Voice, utilizing the built in speech detector and a Flash Memory, which stored the vocabulary.
- **Caller ID demodulation**
  The DSP implements monitor and demodulate the FSK/DTMF signals that provide CID information from the Central Office.
- **Digital Switching**
  The voice signal from telephone line is transmitted to the handset or the voice signal from the handset is transmitted to the Telephone line, etc. They are determined by the signal path route operation of voice signal.
- **Block Interface Circuit**
  RF part, LED, Key scan, Speaker, Microphone, Telephone line.

4.4.2. Flash Memory (IC601)

Following information data is stored.

- **Voice signal**
  ex: Pre-recorded Greeting message, Incoming message
- **Settings**
  ex: message numbers, ID code, Flash Time, Tone/Pulse

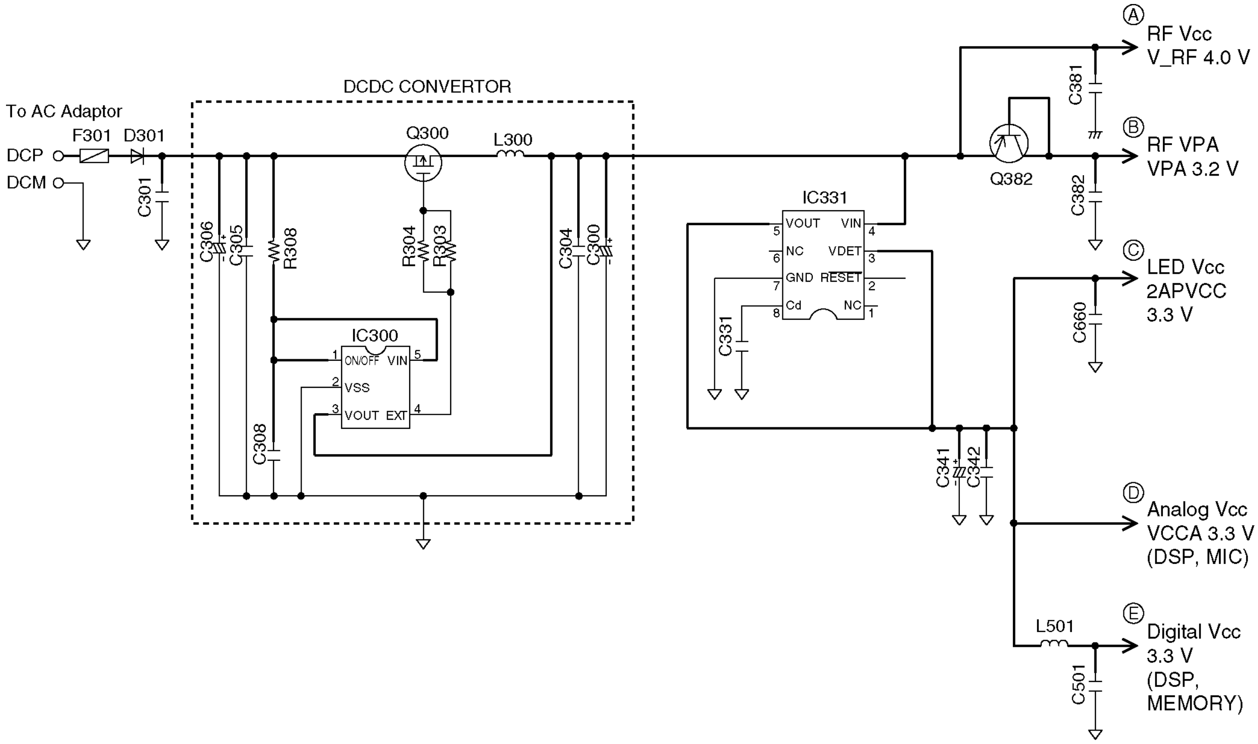
4.4.3. Power Supply Circuit

Function:

The power supply voltage from AC adaptor is converted to the desired voltage of each block.

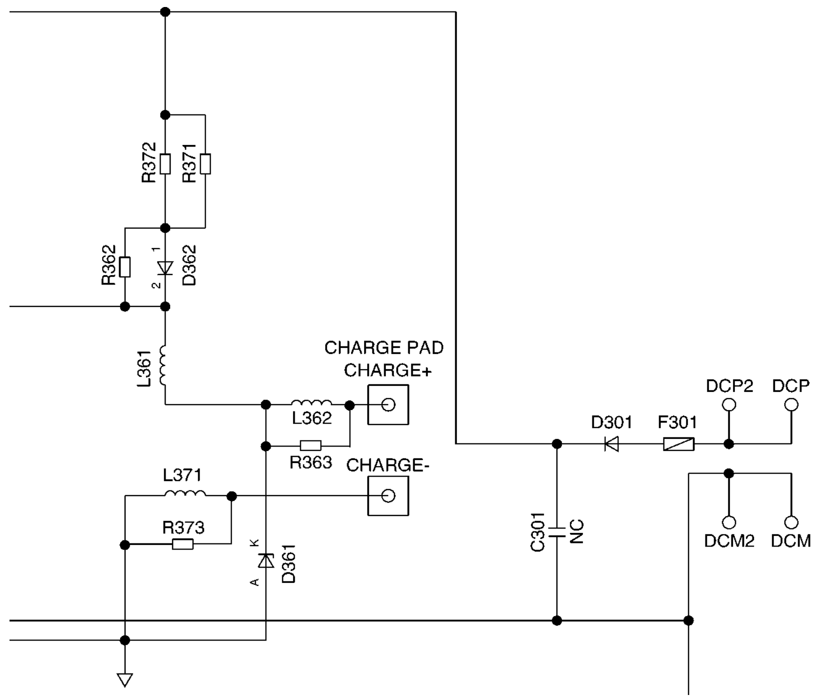
Circuit Operation:

- Q300 and IC300: 4.0 V DCDC Converter
- IC331: 3.3 V Regulator



4.4.3.1. Charge Circuit

The voltage from the AC adaptor is supplied to the charge circuits.



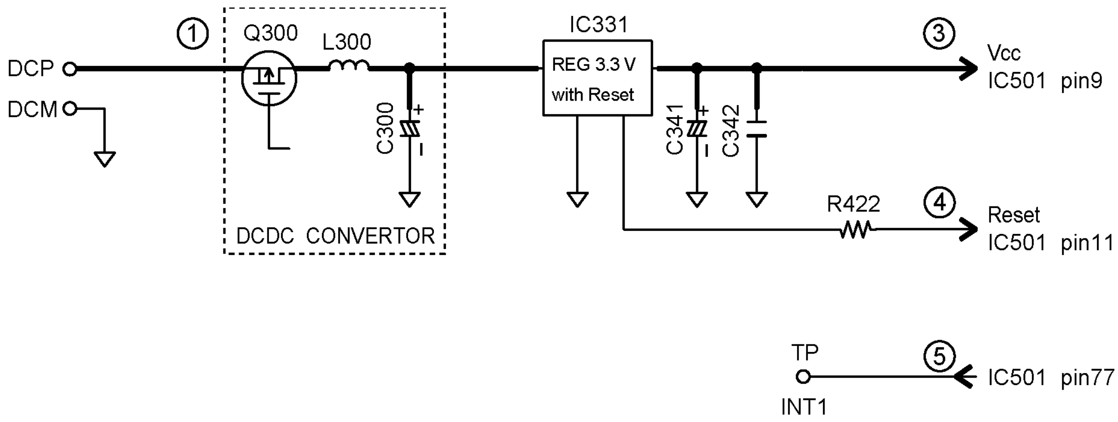
4.4.4. Reset Circuit

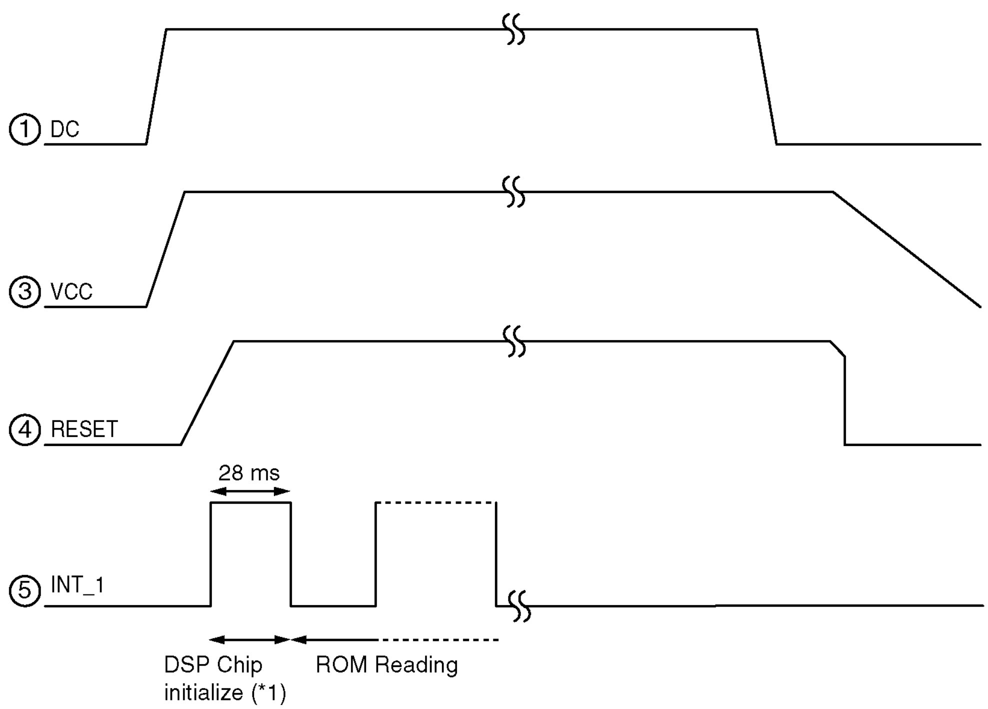
Function:

This circuit is used to initialize the microcomputer when it incorporates an AC adaptor.

Circuit Operation:

When the AC Adaptor is inserted into the unit, then the voltage is shifted by IC331 and power is supplied to the DSP.
The set starts to operate when VCC goes up to 3.0 V or more in the circuit voltage diagram.





Note:

(*1) The initializing time of the DSP chip is 28 ms under normal conditions.

4.4.5. Telephone Line Interface

Telephone Line Interface Circuit:

Function

- Bell signal detection
- ON/OFF hook and pulse dial circuit
- Side tone circuit

Bell signal detection and OFF HOOK circuit:

In the idle mode, Q141 is open to cut the DC loop current and decrease the ring load. When ring voltage appears at the Tip (T) and Ring (R) leads (When the telephone rings), the AC ring voltage is transferred as follows:

T → L101 → R111 → C111 → Q111 → DSP pin 58 [BELL]

When the CPU (DSP) detects a ring signal, Q141 turns on, thus providing an off-hook condition (active DC current flow through the circuit). Following signal flow is the DC current flow.

T → L101 → D101 → Q141 → Q161 → R163 → R167 → D101 → L102 → P101 → R

ON HOOK Circuit:

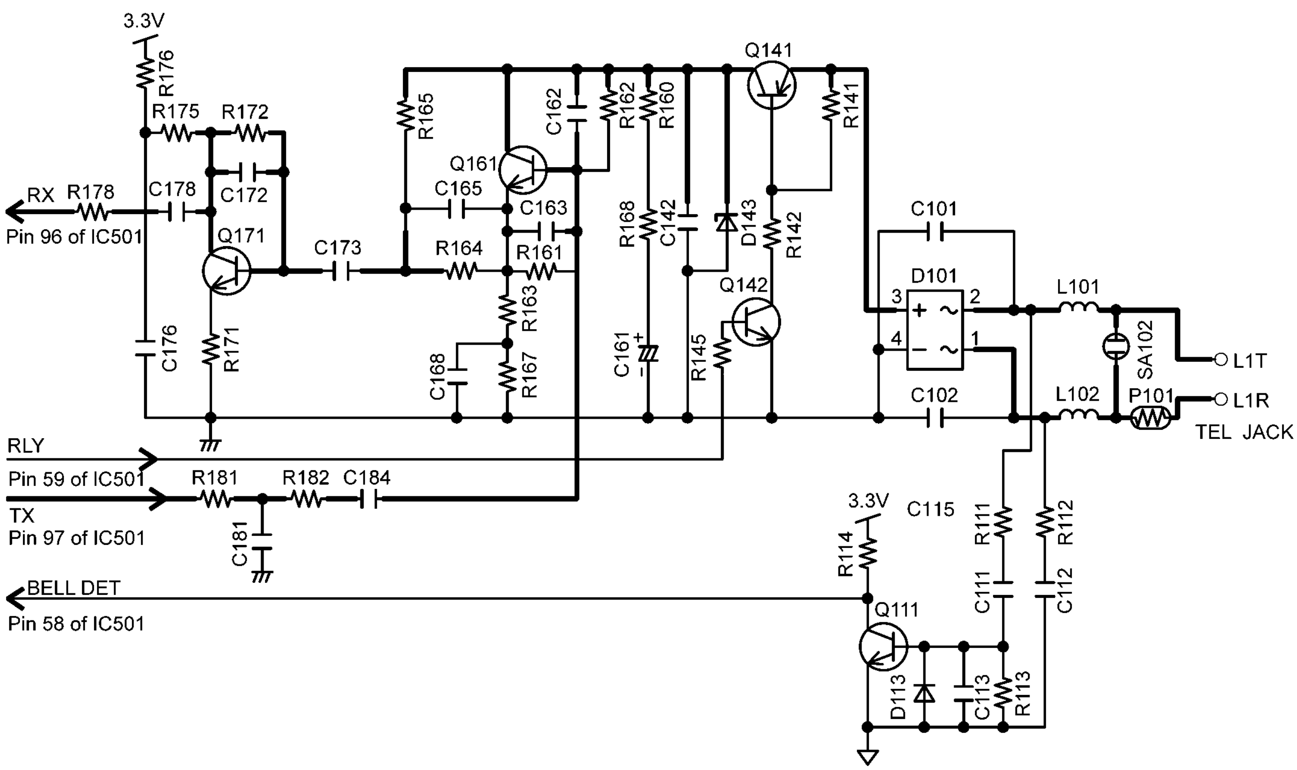
Q141 is open, Q141 is connected as to cut the DC loop current and to cut the voice signal. The unit is consequently in an on-hook condition.

Pulse Dial Circuit:

Pin 59 of DSP turns Q141 ON/OFF to make the pulse dialing.

Side Tone Circuit:

Basically this circuit prevents the TX signal from feeding back to RX signal. As for this unit, TX signal feed back from Q161 is canceled by the canceller circuit of DSP.



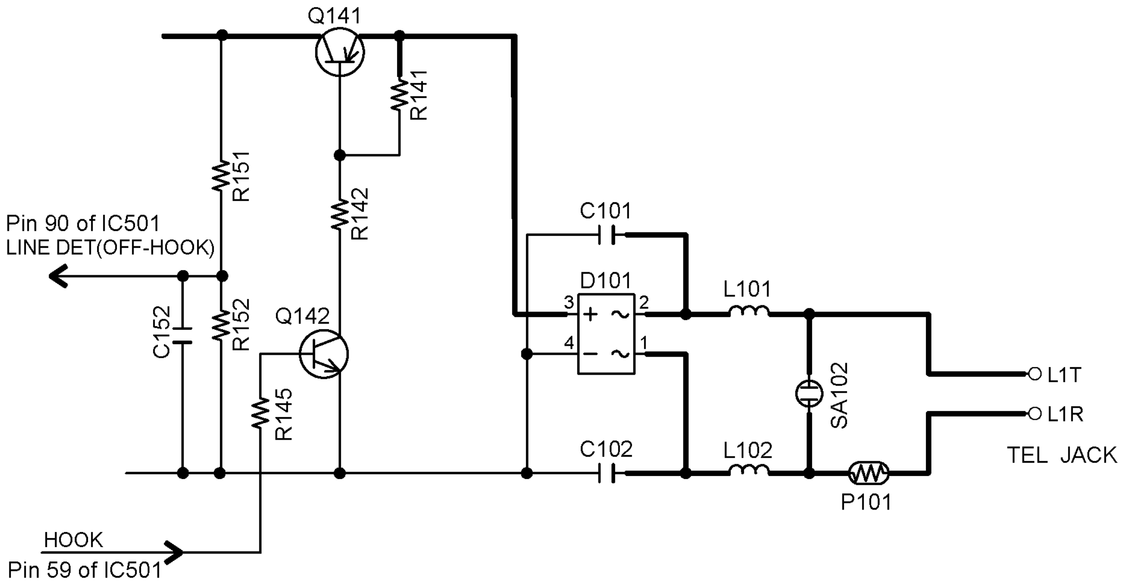
4.4.6. Auto Disconnect Circuit

Function:

This circuit is used to detect the fact that another telephone connected to the same line is OFF-HOOK while the unit is in a receiving status or OGM transmitting status.

Circuit Operation:

The voltage of pin 90 of IC501 is monitored. If a parallel-connected telephone is put into OFF HOOK status, the presence/absence of a parallel connection is determined when the voltage changes by 0.2 V or more. When the set detects the parallel-connected telephone is OFF HOOK status, the line is disconnected.



You can enable or disable the Auto Disconnect function.
See **Check Record** (P.52)

4.4.7. Parallel Connection Detect Circuit

Function:

In order to disable call waiting and stutter tone functions when using telephones connected in parallel, it is necessary to have a circuit that judges whether a telephone connected in parallel is in use or not. This circuit determines whether the telephone connected in parallel is on hook or off hook by detecting changes in the T/R voltage.

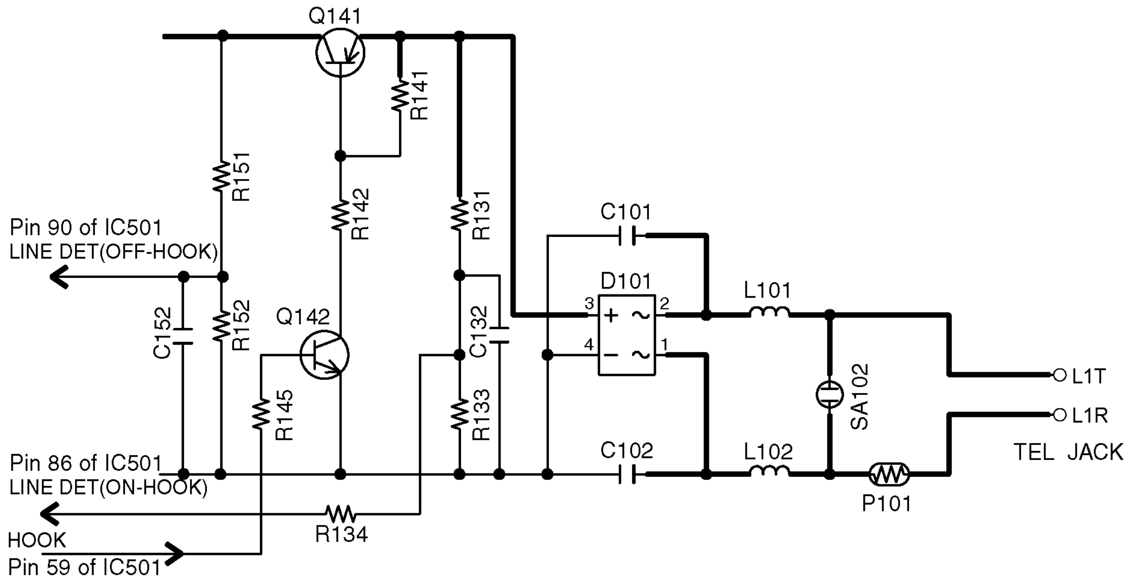
Circuit Operation:

Parallel connection detection when on hook:

When on hook, the voltage is monitored at pin 86 of IC501. There is no parallel connection if the voltage is 1.65 V or higher, while a parallel connection is deemed to exist if the voltage is lower.

Parallel connection detection when off hook:

When off hook, the voltage is monitored at pin 90 of IC501; the presence/absence of a parallel connection is determined when the voltage changes by 0.2 V or more.



4.4.8. Calling Line Identification (Caller ID)/Call Waiting Caller ID

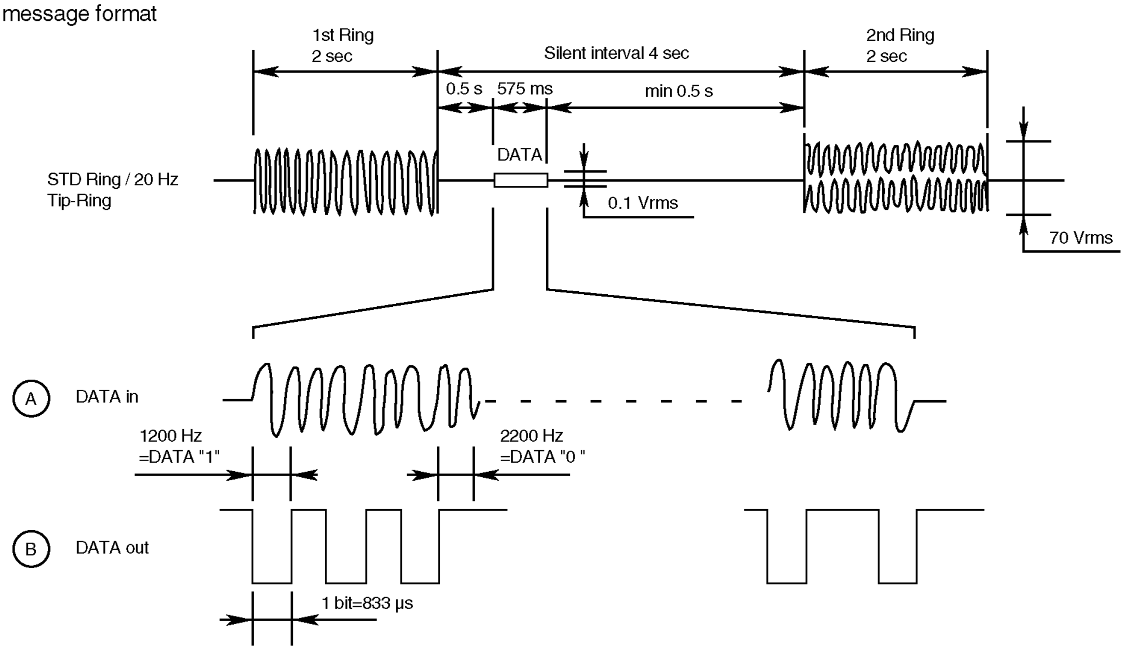
Function:

Caller ID

The caller ID is a chargeable ID which the user of a telephone circuit obtains by entering a contract with the telephone company to utilize a caller ID service. For this reason, the operation of this circuit assumes that a caller ID service contract has been entered for the circuit being used. The data for the caller ID from the telephone exchange is sent during the interval between the first and second rings of the bell signal. The data from the telephone exchange is a modem signal which is modulated in an FSK (Frequency Shift Keying) * format. Data "1" is a 1200 Hz sine wave, and data "0" is a 2200 Hz sine wave. There are two types of the message format which can be received: i.e. the single message format and plural message format. The plural message format allows to transmit the name and data code information in addition to the time and telephone number data.

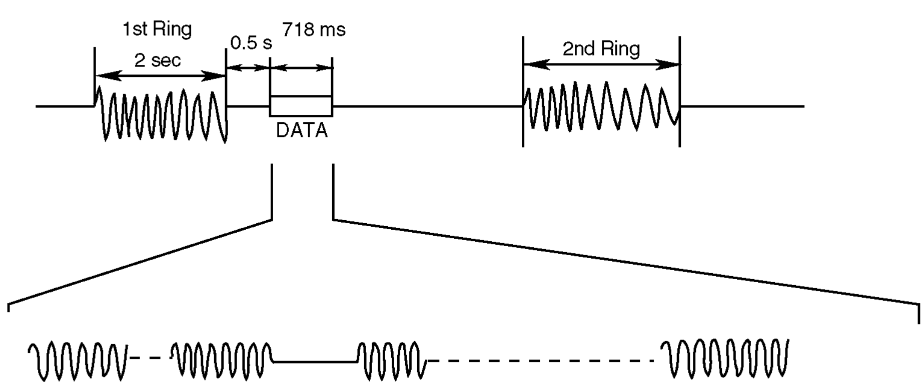
*: Also the telephone exchange service provides other formats.

- Single message format



month		day		hour		minute		number
04	–	15	–	16	–	35	–	2013487000

- Plural message format



DATA CODE	NAME
201	John Smith

month		day		hour		minute		number
04	–	16	–	16	–	35	–	2013487000

Call Waiting Caller ID

Calling Identity Delivery on Call Waiting (CIDCW) is a CLASS service that allows a customer, while off-hook on an existing call, to receive information about a calling party on a waited call. The transmission of the calling information takes place almost immediately after the customer is alerted to the new call so he/she can use this information to decide whether to take the new call.

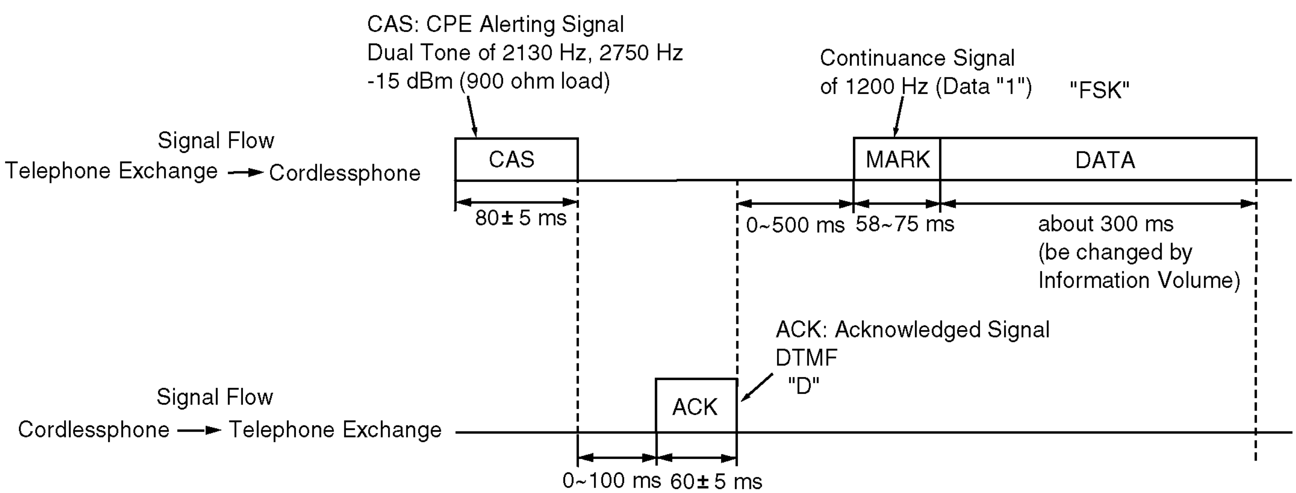
Function:

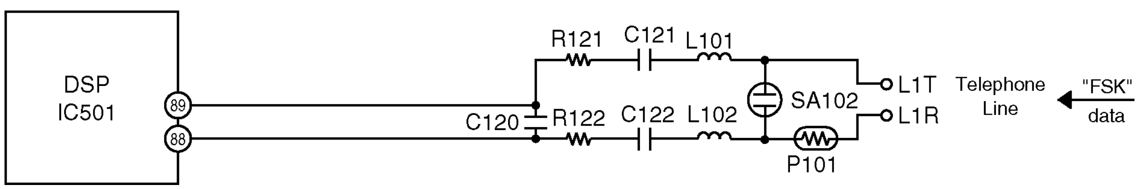
The telephone exchange transmits or receives CAS and ACK signals through each voice RX/TX route. Then FSK data and MARK data pass the following route.

Telephone Line → CN101 (T, R) → P101 → L101, L102 → C121, C122 → R121, R122 → IC501 (89, 88).

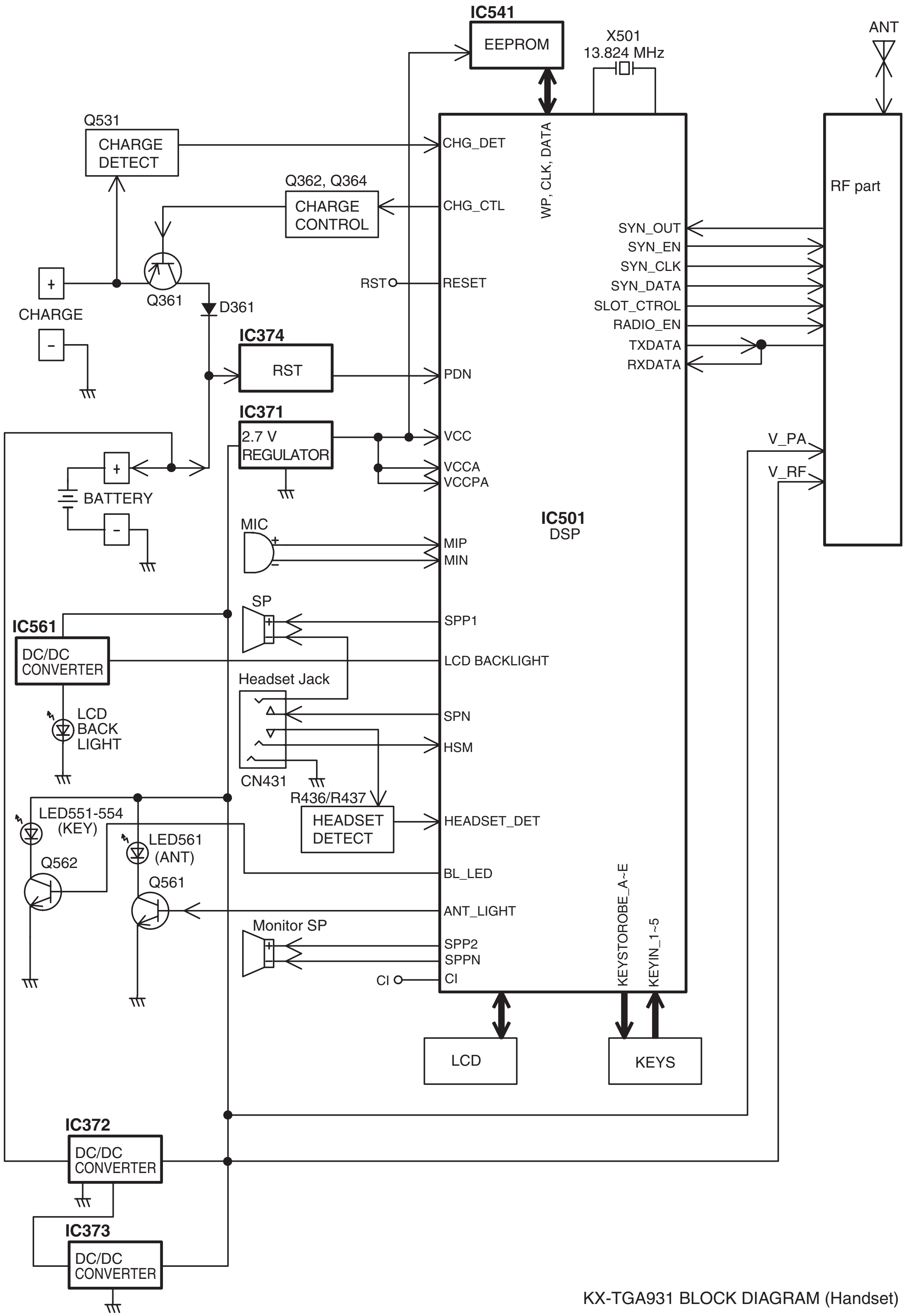
If the unit deems that a telephone connected in parallel is in use, ACK is not returned even if CAS is received, and the information for the second and subsequent callers is not displayed on the portable handset display.

Call Waiting Format



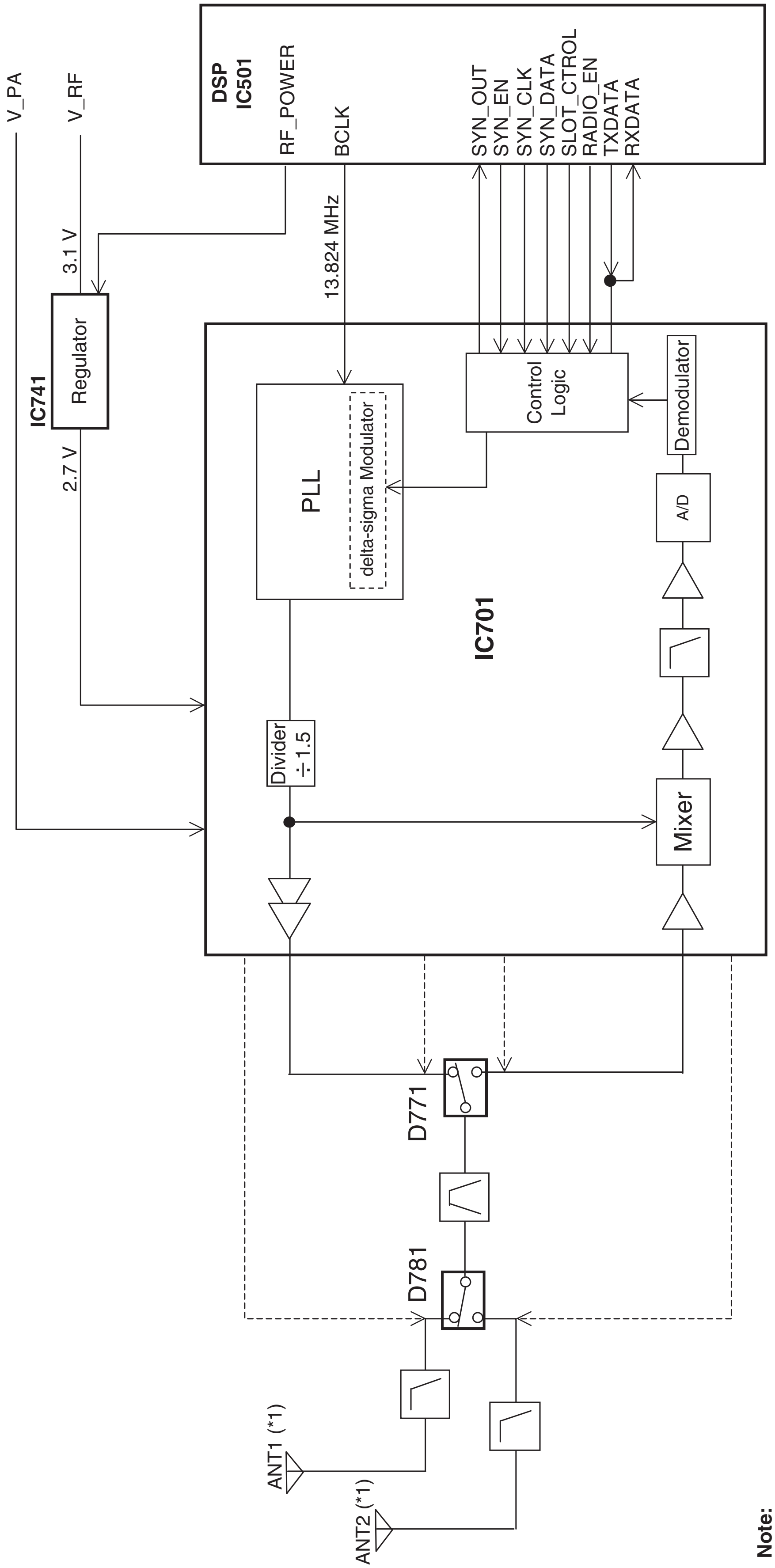


4.5. Block Diagram (Handset)



KX-TGA931 BLOCK DIAGRAM (Handset)

4.6. Block Diagram (Handset_RF Part)



KX-TGA931 BLOCK DIAGRAM (Handset_RF Part)

Note:

(*1) Antenna Type (difference between base unit and handset in Radio parts)
ANT1: wired dipole antenna
ANT2: patterned antenna

4.7. Circuit Operation (Handset)

4.7.1. Construction

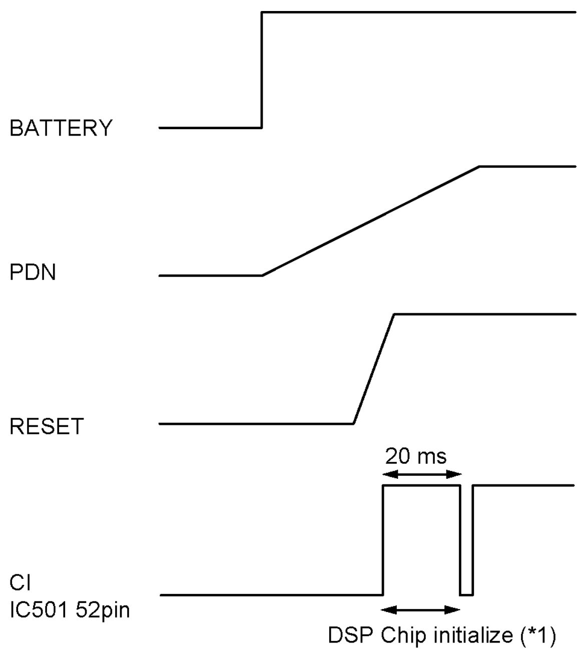
The circuit mainly consists of DSP and RF part as shown in the block diagram.

4.7.1.1. DSP: IC501

Function

- Battery Low, Power down detect circuit
- Ringer Generation
- Interface circuit
  RF part, Speaker, Mic, LED, Key scan, LCD, Headset

Initial waves



Note:

(*1) The initializing time of the DSP chip is 20 ms under normal conditions.

4.7.1.2. RF part

Mainly voice signal is modulated to RF, or it goes the other way.

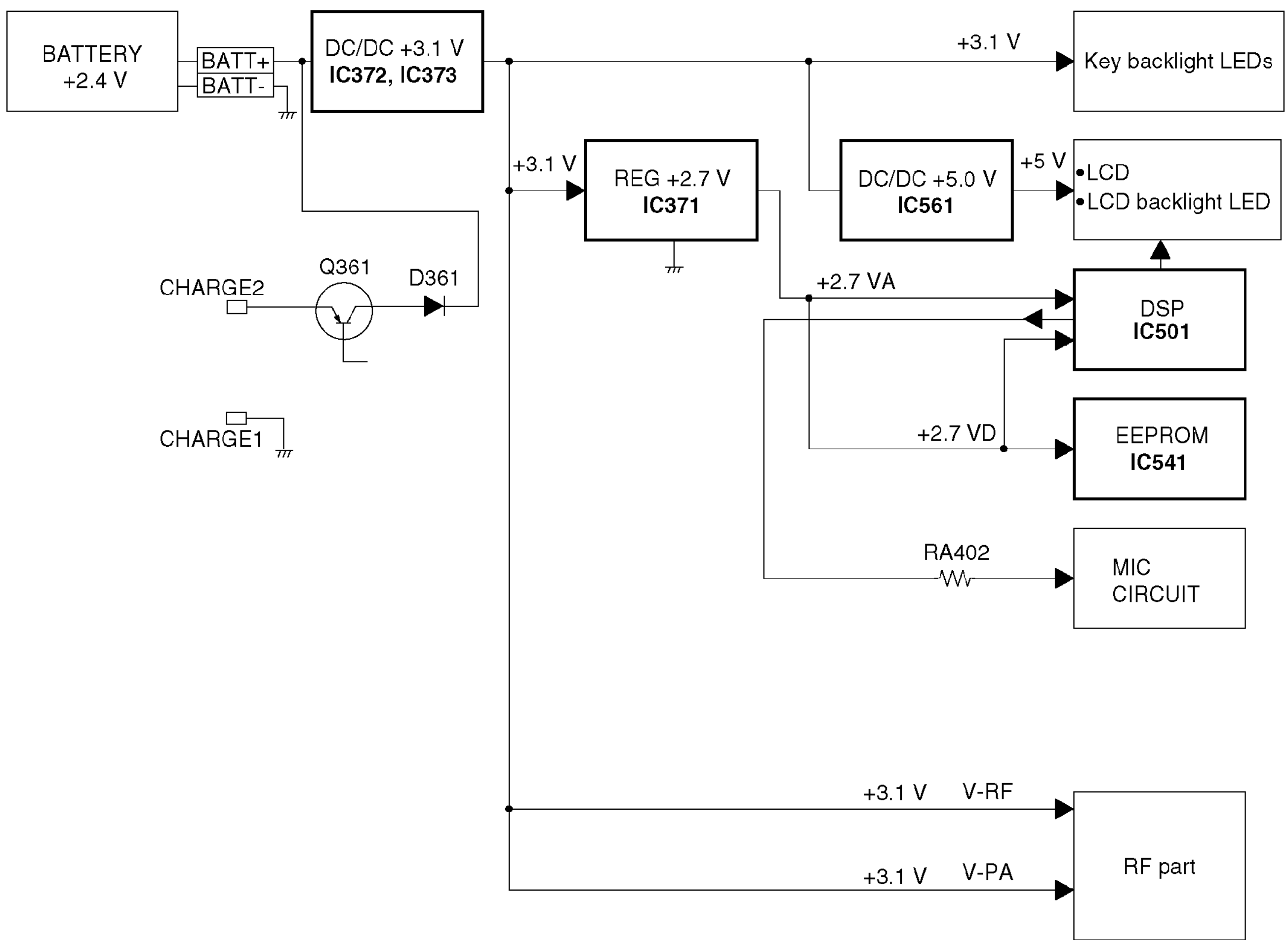
4.7.1.3. EEPROM: IC541

Setting data is stored.
ex: ID code, user setting

4.7.2. Power Supply Circuit

Voltage is supplied separately to each block.

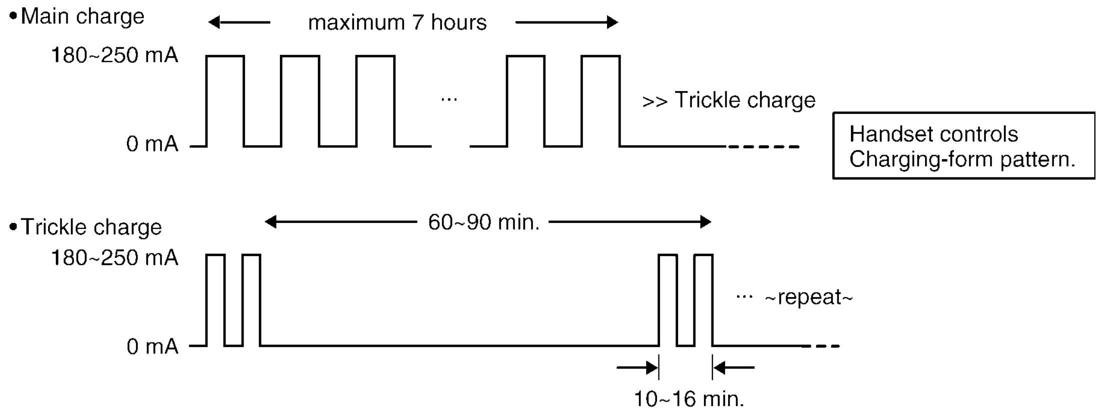
Block Diagram (Handset Power)

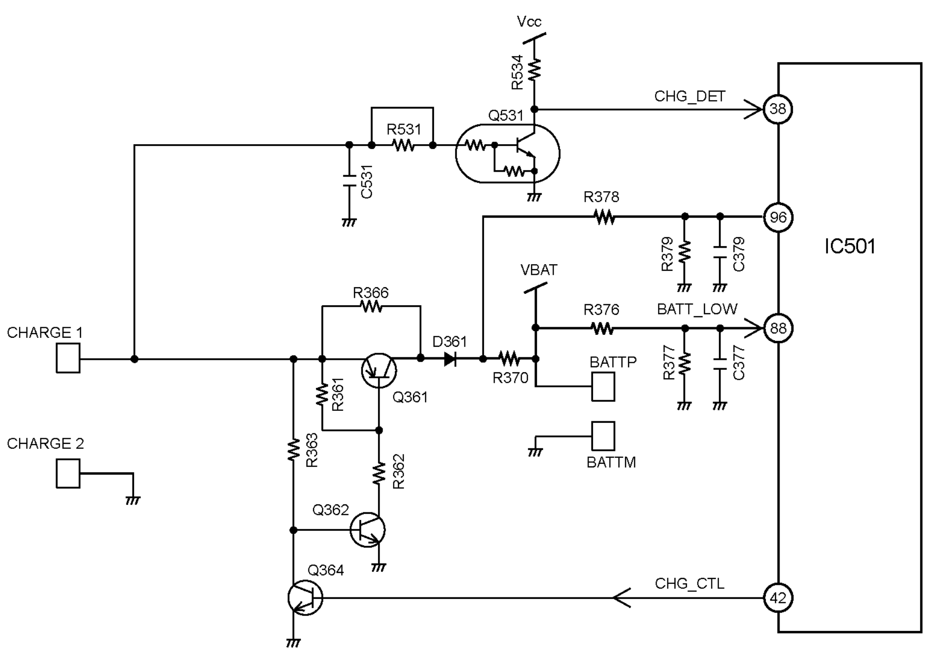


4.7.3. Charge Circuit

When the handset is put on the cradle of the base unit, the power is supplied from CHARGE+ and CHARGE- terminals to charge the battery via R366 or Q361. The voltage between CHARGE+ and CHARGE- flows Q531 → pin 38 of IC501, where the charge is detected. Then IC501 calculates the battery consumption amount from the previous charge, and it controls Q361/Q362/Q364 by pin 42 of IC501 until charging is complete. When charging is complete, the control pattern is switched to Trickle charging form from Operational charging form.

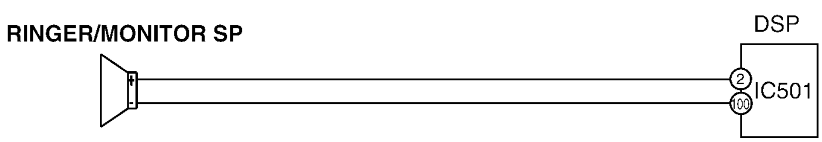
Charging form





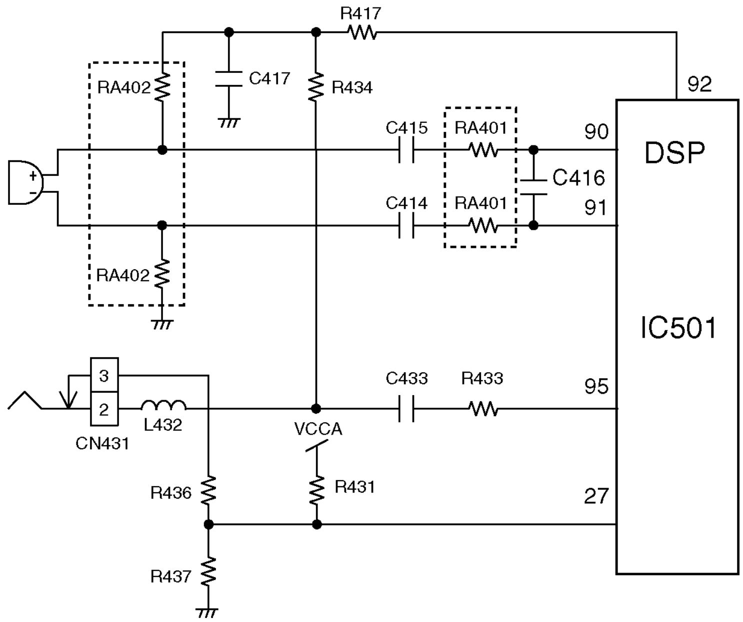
Pin 88 of IC501 monitors the battery voltage and detect BATT LOW at 2.34 V.

4.7.4. Ringer and Handset SP-Phone



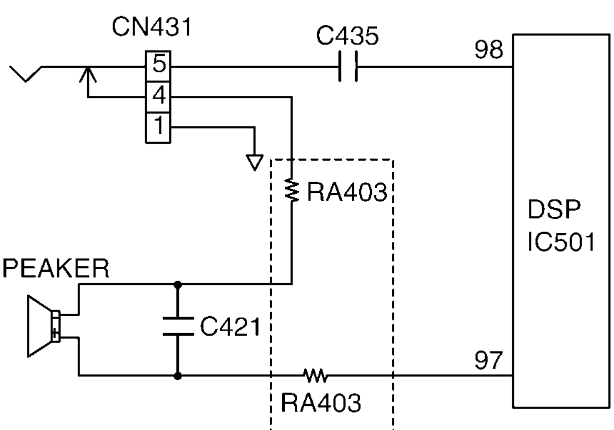
4.7.5. Sending Signal

The voice signal from the microphone is input to DSP (90, 91). CN431 is the headset jack. When the headphone is connected, the R436/R437 detects it. The input from the microphone of the handset (MIM, MIP) is cut and the microphone signal from the headset is input to DSP (95). Also the power for the microphone is supplied from DSP (92) and the power is turned OFF on standby.



4.7.6. Reception Signal

The voice signal from the base unit is output to DSP (98). This signal is led to the headset jack (CN431). The signal through the headset jack and the other signal output from DSP (97) drives the speaker. When the headset is inserted to the jack, the voice signal is cut at the jack, so the sound does not come out from the speaker, but from the headset only.



4.8. Circuit Operation (RF Part)

General Description:

RF part includes Transmitter and Receiver functions. Digital signals (Mainly voice data) that come from DSP, are modulated and are transmitted. On the other hand, received signals are demodulated and go out to DSP.

4.8.1. Power Supply Circuit

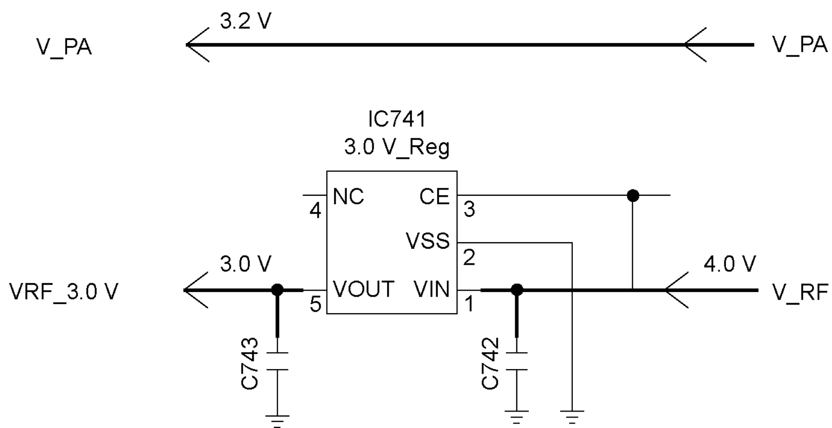
As indicated below, the various voltages are supplied to each block.

V_PA, about 3.2 V at base unit or 3.1 V at handset, is supplied to the Power amplifier.

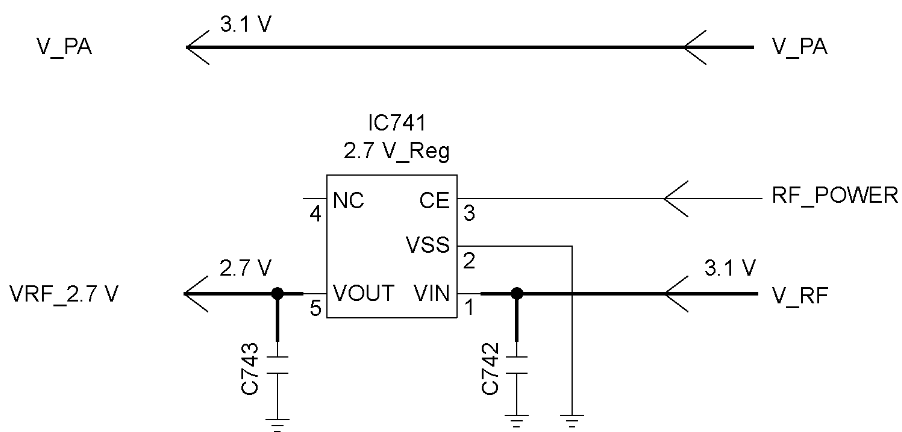
IC741 is 3.0 V at base unit or 2.7 V at handset Regulator and outputs VRF (3.0 V at base unit or 2.7 V at handset) by order of RADIO_EN signal.

V_RF is approximately 4.0 V (Base Unit) or 3.1 V (Handset).

<Base Unit>



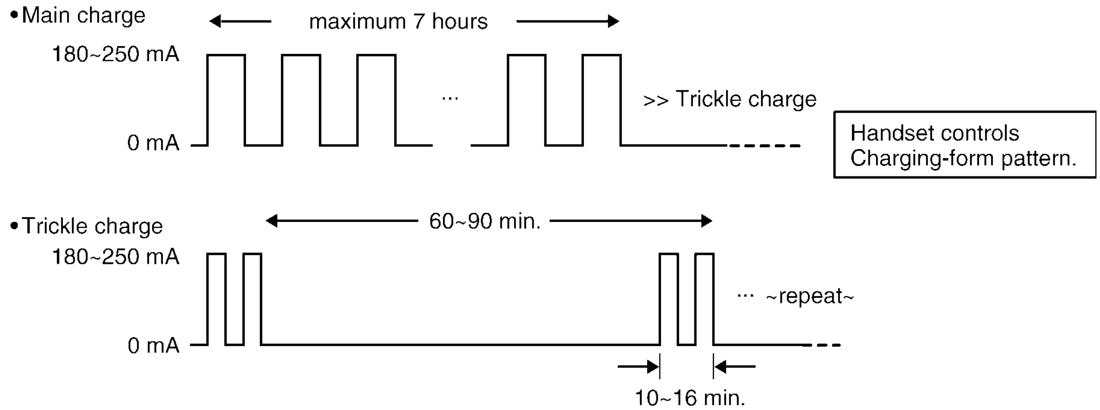
<Handset>

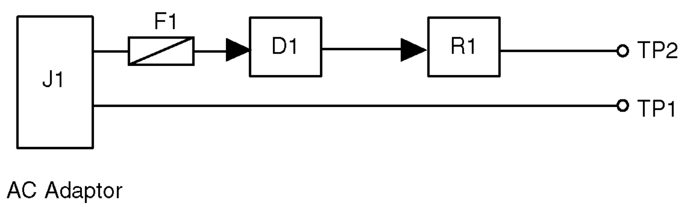


4.9. Circuit Operation (Charger Unit)

The voltage from the AC adaptor is supplied to the charge circuits. Main charge (180~250 mA at the Battery) of maximum 7-hours is started soon after the handset is placed on the charger unit. Then it changes to Trickle charge to prevent from over-charging.

Charging form





The route for this is as follows: DC+pin of J1(+) → F1 → D1 → R1 → CHARGE+pad → Handset → CHARGE-pad → DC-pin of J1(-).

4.10. Signal Route

SIGNAL ROUTE	IN → ROUTE → OUT
HANDSET TX	HANDSET MIC - C414/C415 - RA401 - IC501(91/90 - 20) - **<HANDSET_RF_TX_ROUTE>** - ANT. ---
	---ANT. - **<BASE_UNIT_RF_RX_ROUTE>** - IC501(34 - 97) - R181 - R182 - C184 - Q161 - Q141 - D101 - L101/[L102 - P101] - T/R(TEL LINE)
HANDSET RX	T/R(TEL LINE) - L101/[P101 - L102] - D101 - Q141 - R165 - C173 - Q171 - C178 - R178 - IC501(96 - 18) - **<BASE_UNIT_RF_TX_ROUTE>** - ANT. ---
	--- ANT. - **<HANDSET_RF_RX_ROUTE>** - IC501(36 - 98/97) - [C435 - L434 - HEADSET_JACK(5 - 4) - RA403]/RA403 - HANDSET SPEAKER
HEADSET TX	HEADSET_JACK(2) - C433 - R433 - IC501(95 - 20) - **<HANDSET_RF_TX_ROUTE>** - ANT. ---
	---ANT. - **<BASE_UNIT_RF_RX_ROUTE>** - IC501(34 - 97) - R181 - R182 - C184 - Q161- Q141 - D101 - L101/[L102 - P101] - T/R(TEL LINE)
HEADSET RX	T/R(TEL LINE) - L101/[P101 - L102] - D101 - Q141 - R165 - C173 - Q171 - C178 - R178 - IC501(96 - 18) - **<BASE_UNIT_RF_TX_ROUTE>** - ANT. ---
	--- ANT. - **<HANDSET_RF_RX_ROUTE>** - IC501(36 - 98) - C435 - L434 - HEADSET_JACK(5)
HANDSET SP-Phone TX	HANDSET MIC - C414/C415 - RA401 - IC501(91/90 - 20) - **<HANDSET_RF_TX_ROUTE>** - ANT. ---
	---ANT. - **<BASE_UNIT_RF_RX_ROUTE>** - IC501(34 - 97) - R181 - R182 - C184 - Q161 - Q141 - D101 - L101/[L102 - P101] -T/R(TEL LINE)
HANDSET SP-Phone RX	T/R(TEL LINE) - L101/[P101 - L102] - D101 - Q141 - R165 - C173 - Q171 - C178 -R178 - IC501(96 - 18) - **<BASE_UNIT_RF_TX_ROUTE>** - ANT. ---
	--- ANT. -**<HANDSET_RF_RX_ROUTE>** - IC501(36 - 2/100) - MONITOR SP
BASE SP-Phone TX	MIC1 - C457/C458 - RA452 - IC501 (93/94 - 97) - R181 - R182 - C184 - Q161 - Q141 - D101 - L101/[L102 - P101] - T/R(TEL LINE)
BASE SP-Phone RX	T/R(TEL LINE) - L101/[P101 - L102] - D101 - Q141 - R165 - C173 - Q171 - C178 - R178 - IC501(96) - IC501 (96 - 2/100) - SPEAKER
INTERCOM HANDSET TO BASE UNIT	HANDSET MIC - C414/C415 - RA401 - IC501(91/90 - 20) - **<HANDSET_RF_TX_ROUTE>** - ANT. ---
	--- ANT. - **<BASE_UNIT_RF_RX_ROUTE>** - IC501(34 - 2/100) - L474/L475 - SPEAKER
INTERCOM BASE UNIT TO HANDSET	MIC - C457/C458 - RA452 - IC501(93/94 - 18) - **<BASE_UNIT_RF_TX_ROUTE>** - ANT. ---
	--- ANT. - **<HANDSET_RF_RX_ROUTE>** - IC501(36 - 98/97) - [C435 - L434 - HEADSET_JACK(5 - 4) - RA403]/RA403 - HANDSET SPEAKER
GREETING RECORDING	MIC - C457/C458 - RA452 - IC501(93/94 - 13/14) - IC601
GREETING PLAY TO TEL LINE	IC601 - IC501(13/14 - 97) - R181 - R182 - C184 - Q161 - Q141 - D101 - L101/[L102 - P101] - T/R(TEL LINE)
ICM RECORDING	T/R(TEL LINE) - L101/[P101 - L102] - D101 - Q141 - R165 - C173 - Q171 - C178 - R178 - IC501(96 - 13/14) - IC601
ICM PLAY TO SPEAKER	IC601 - IC501(13/14 - 2/100) - L474/L475 - SPEAKER

Note:

☐: inside of Handset

SIGNAL ROUTE	IN → ROUTE → OUT
DTMF SIGNAL TO TEL LINE	IC501(97) - R181 - R182 - C184 - Q161 - Q141 - D101 - L101/[L102 - P101] - T/R(TEL LINE)
CALLER ID	T/R(TEL LINE) - L101/[P101 - L102] - C121/C122 - R121/R122 - IC501(88/89)
BELL DETECTION	T/R(TEL LINE) - L101/[P101 - L102] - R111/R112 - C111/C112 - Q111 - IC501(58)

RF part signal route

SIGNAL ROUTE	IN → ROUTE → OUT
HANDSET RF [TX_ROUTE]	R736 - IC701(20 - 9/10) - C765 - C763 - D771 - C776 - D781 - L795/L791 - C797/C793 - ANT1/ANT2
HANDSET RF [RX_ROUTE]	ANT1/ANT2 - C797/C793 - L795/L791 - D781 - C776 - D771 - C773 - IC701(7/8 - 20)
BASE UNIT RF [TX_ROUTE]	R736 - IC701(20 - 9/10) - C765 - C763 - D771 - C776 - D781 - L795/L791 - C797/C793 - ANT1/ANT2
BASE UNIT RF [RX_ROUTE]	ANT1/ANT2 - C797/C793 - L795/L791 - D781 - C776 - D771 - C773 - IC701(7/8 - 20)

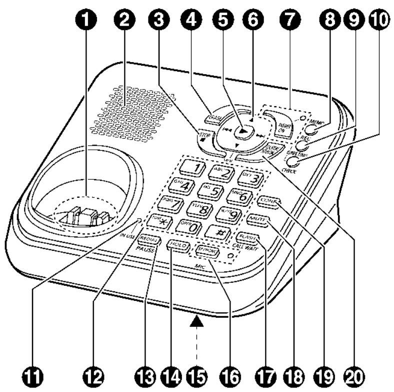
Note:

[ ]: inside of Handset

5 Location of Controls and Components

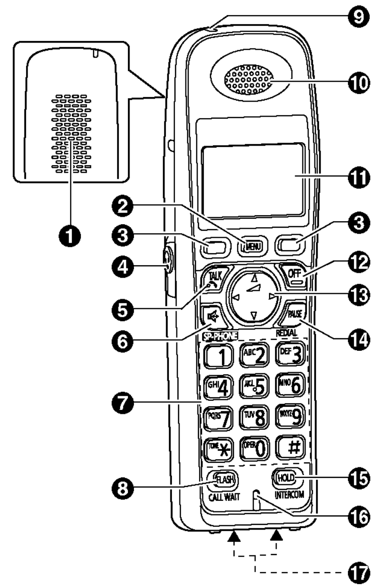
5.1. Controls

5.1.1. Base Unit



❶ Charge contacts
❷ Speaker
❸ 【■】 (STOP)
❹ 【ERASE】
❺ 【►】 (Play)
Message indicator
❻ 【▲】 (VOL.: Volume up)
【▼】 (VOL.: Volume down)
【⏮】 (Repeat)
【⏭】 (Skip)
❼ 【ANSWER ON】
ANSWER ON indicator
❽ 【MEMO】
❾ 【GREETING REC】 (Recording)
❿ 【GREETING CHECK】
⓫ IN USE indicator
⓬ Dial keypad
(【✱】: TONE)
⓭ 【REDIAL】 【PAUSE】
⓮ 【HOLD】
⓯ MIC (Microphone)
⓰ 【SP-PHONE】 (Speakerphone)
SP-PHONE indicator
⓱ 【FLASH】 【CALL WAIT】
⓲ 【MUTE】
⓳ 【CONF】 (Conference)
⓴ 【LOCATOR】 【INTERCOM】

5.1.2. Handset



❶ Speaker
❷ 【MENU】
❸ Soft keys
❹ Headset jack
❺ 【📞】 (TALK)
❻ 【🔈】 (SP-PHONE: Speakerphone)
❼ Dial keypad
(【✱】: TONE)
❽ 【FLASH】 【CALL WAIT】
❾ Charge indicator
Ringer indicator
Message indicator
❿ Receiver
⓫ Display
⓬ 【OFF】
⓭ Navigator key (【▲】/【▼】/【◄】/【►】)
◿ (Volume: 【▲】/【▼】)
⓮ 【PAUSE】 【REDIAL】
⓯ 【HOLD】 【INTERCOM】
⓰ Microphone
⓱ Charge contacts

5.2. Display

Handset display items

Item	Meaning
▮▮▮	Battery level
[1]	Handset number
Line in use	Someone is using the line.

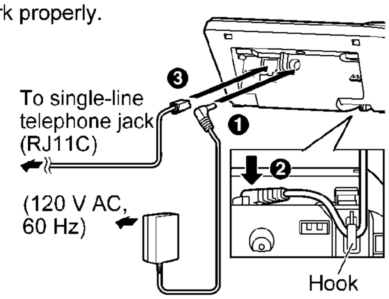
6 Installation Instructions

6.1. Connections

Connect the AC adaptor cord (❶) by pressing the plug firmly (❷). Connect the telephone line cord until it clicks into the base unit and telephone line jack (❸).

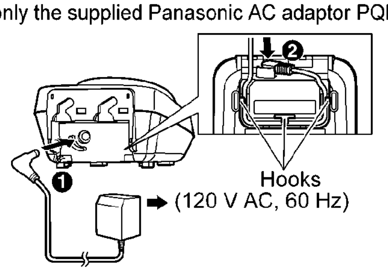
Base unit

- Use only the supplied Panasonic AC adaptor PQLV207T.
- Use only the supplied telephone line cord. Using another telephone line cord may not allow the unit to work properly.



Charger

- Use only the supplied Panasonic AC adaptor PQLV209T.



Note:

- The AC adaptor must remain connected at all times. (It is normal for the adaptor to feel warm during use.)
- The AC adaptor should be connected to a vertically oriented or floor-mounted AC outlet. Do not connect the AC adaptor to a ceiling-mounted AC outlet, as the weight of the adaptor may cause it to become disconnected.

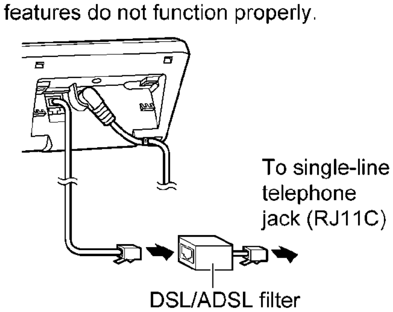
During a power failure

The unit will not work during a power failure. We recommend connecting a corded-type telephone (without AC adaptor) to the same telephone line or to the same telephone line jack using a Panasonic T-adaptor. Emergency power can be supplied to the unit by connecting a Panasonic battery back-up power supply.

If you subscribe to a DSL/ADSL service

Please attach a DSL/ADSL filter (contact your DSL/ADSL provider) to the telephone line between the base unit and the telephone line jack in the event of the following:

- noise is heard during conversations.
- Caller ID features do not function properly.



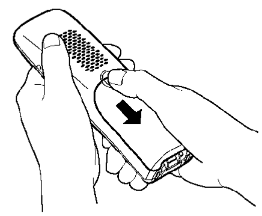
6.2. Battery

6.2.1. Battery Installation and Replacement

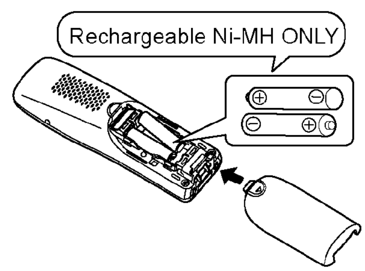
Important:

- Use the supplied rechargeable batteries (Part No. HHR-65AAABU).
- When installing the batteries:
  - Wipe the battery ends (⊕, ⊖) with a dry cloth.
  - Avoid touching the battery ends (⊕, ⊖) or the unit contacts.
  - Ensure correct polarities (⊕, ⊖).
- When replacing the batteries:
  - USE ONLY rechargeable Ni-MH batteries AAA (R03) size.
  - Do NOT use Alkaline/Manganese/Ni-Cd batteries.
  - We recommend using the Panasonic rechargeable batteries HHR-4DPA.

1 Press the notch on the handset cover firmly, and slide it in the direction of the arrow.

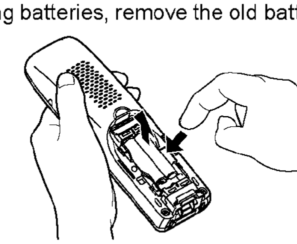


2 Insert the batteries negative (⊖) end first. Close the handset cover.



Note:

- When replacing batteries, remove the old batteries.



Attention:

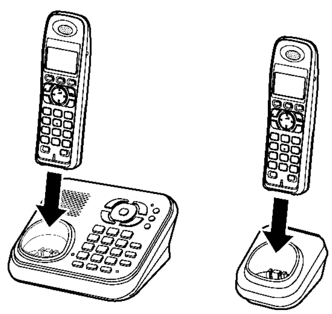
A nickel metal hydride battery that is recyclable powers the product you have purchased.
Please call 1-800-8-BATTERY (1-800-822-8837) for information on how to recycle this battery.

6.2.2. Battery Charge

Place the handset on the base unit or charger for about 7 hours before initial use.

- While charging, “Charging” is displayed and the charge indicator on the handset lights up. When the batteries are fully charged, “Charge completed” is displayed.

Base unit: **Charger:**



Note:

- It is normal for the handset to feel warm during charging.
- If you want to use the handset immediately, charge the batteries for at least 15 minutes.
- Clean the charge contacts of the handset, base unit, and charger with a soft and dry cloth. Clean if the unit is exposed to grease, dust, or high humidity.

Note for service:

The battery strength may not be indicated correctly if the battery is disconnected and connected again, even after it is fully charged. In that case, by recharging the battery as mentioned above, you will get a correct indication of the battery strength.

6.2.3. Battery Level

Battery icon	Battery level
	High
	Medium
	Low ● When flashing: Needs to be charged.
	Empty

Note:

- The batteries need to be charged if:
  - the handset alerts you with a voice announcement **(talking battery alert)** after you finish talking/listening to a message.
  - the handset beeps while you are engaged in a call or operating the answering system remotely.

6.2.4. Panasonic Ni-MH Battery Performance (supplied batteries)

Operation	Operating time
In continuous use	5 hours max.
Not in use (standby)	11 days max.
While using the clarity booster featur	3 hours max.

Note:

- Actual battery performance depends on a combination of how often the handset is in use and how often it is not in use (standby).
- Even after the handset is fully charged, the handset can be left on the base unit or charger without any ill effect on the batteries.
- The battery level may not be displayed correctly after you replace the batteries. In this case, place the handset on the base unit or charger and let it charge for at least 7 hours.

7 Operating Instructions

7.1. Programmable Settings

You can customize the unit by programming the following features using the handset.
To access the features, there are 2 methods:
– scrolling through the display menus
– using the direct commands
- Mainly the direct command method is used in this service manual.

7.1.1. Programming by Scrolling through the Display Menus

1 【MENU】
2 Press 【▼】 or 【▲】 to select the desired main menu. → 【Select】
3 Press 【▼】 or 【▲】 to select the desired item in sub-menu 1. → 【Select】
- In some cases, you may need to select from sub-menu 2. → 【Select】

4 Press 【▼】 or 【▲】 to select the desired setting. → 【Save】
- This step may vary depending on the feature being programmed.
- To exit the operation, press 【OFF】.

Main menu	Sub-menu 1	Sub-menu 2
Message play	–	–
V.M. access	–	–
Block calls*1	–	–
Night mode	On/Off	–
	Start/End	–
Ringer setting	Ringer volume	–
	Ringer tone	–
Set date & time	Date and time*1	–
	Alarm	–
	Time adjustment*1	–
Talking CallerID	–	–
Customer support	–	–
Initial setting	Set answering	Ring count*1
		Recording time*1
		Remote code*1
	Voice Mail	Store VM access#*1
		VM tone detect*1
	Message alert	–
	LCD contrast	–
	Key tone	–
	Auto talk	–
	Caller ID edit*1	–
	Set tel line	Set dial mode*1
		Set flash time*1
		Set line mode*1
	Set base unit	Talking CallerID*1
	Registration	HS registration
		Deregistration
	Change language	Display
		Voice prompt*1

*1 If you program these settings using one of the handsets, you do not need to program the same item using another handset.

7.1.2. Programming using the Direct Commands

1 【MENU】 → 【♯】
2 Enter the desired feature code.
3 Enter the desired setting code. → 【Save】
- This step may vary depending on the feature being programmed.
- To exit the operation, press 【OFF】.

Note:
- In the following table, < > indicates the default settings.

Feature	Feature code	Setting code	System setting[*1]
Alarm	【7】【2】【0】	【1】: **Once** 【2】: **Daily** 【0】: <**Off**>	–
Auto talk[*2]	【2】【0】【0】	【1】: **On** 【0】: <**Off**>	–
Block calls	【2】【1】【7】	–	●
Caller ID edit (Caller ID number auto edit)	【2】【1】【4】	【1】: <**On**> 【0】: **Off**	●
Customer support	【6】【8】【0】	–	–
Date and time	【1】【0】【1】	–	●
Deregistration	【1】【3】【1】	–	–
Display (Change language)	【1】【1】【0】	【1】: <**English**> 【2】: **Español**	–
HS registration (Handset registration)	【1】【3】【0】	–	–
Key tone[*3]	【1】【6】【5】	【1】: <**On**> 【0】: **Off**	–
LCD contrast (Display contrast)	【1】【4】【5】	【1】–【6】: Level 1–6 <3>	–
Message alert	【3】【4】【0】	【1】: <**On**> 【0】: **Off**	–
Message play	【3】【0】【0】	–	–
Night mode (On/Off)	【2】【3】【8】	【1】: **On** 【0】: <**Off**>	–
Night mode (Start/End)	【2】【3】【7】	<**11:00 PM/06:00 AM**>	–
Recording time	【3】【0】【5】	【1】: **1min** 【2】: **2min** 【3】: <**3min**> 【0】: **Greeting only**	●
Remote code	【3】【0】【6】	<**111**>	●

Feature	Feature code	Setting code	System setting*1
Ring count	[2][1][1]	[2]–[7]: **2–7** rings <**4**> [0]: **Toll saver**	●
Ringer tone*4, *5 (Handset)	[1][6][1]	[1]–[3]: **Tone** <**1**>**–3** [4]–[7]: **Melody 1–4**	–
Ringer volume (Handset)	[1][6][0]	[1]: Low [2]: Medium [3]: <High> [0]: Off	–
Set dial mode	[1][2][0]	[1]: **Pulse** [2]: <**Tone**>	●
Set flash time*6	[1][2][1]	[1]: <**700ms**> [2]: **600ms** [3]: **400ms** [4]: **300ms** [5]: **250ms** [6]: **110ms** [7]: **100ms** [8]: **90ms**	●
Set line mode*7	[1][2][2]	[1]: **A** [2]: <**B**>	●
Store VM access#	[3][3][1]	–	●
Talking CallerID (Handset)	[1][6][2]	[1]: <**On**> [0]: **Off**	–
Talking CallerID (Base unit)	[✱][1][6][2]	[1]: <**On**> [0]: **Off**	●
Time adjustment*8 (Caller ID subscribers only)	[2][2][6]	[1]: <**Caller ID [auto]**> [0]: **Manual**	●
V.M. access	[3][3][0]	–	–
VM tone detect	[3][3][2]	[1]: <**On**> [0]: **Off**	●
Voice prompt (Change language)	[1][1][2]	[1]: <**English**> [2]: **Español**	●

*1 If "System setting" column is checked, you do not need to program the same item using another handset.
*2 If you subscribe to Caller ID service and want to view the caller's information after lifting up the handset to answer a call, turn off this feature.
*3 Turn this feature off if you prefer not to hear key tones while you are dialing or pressing any keys, including confirmation tones and error tones.
*4 If you subscribe to a distinctive ring service (such as IDENTA-RING), select a tone (tone 1 to 3). If you select a melody, you cannot distinguish lines by their ringers.
*5 If you select one of the melody ringer tones, the ringer tone will continue to play for several seconds even if the caller has already hung up. You may either hear a dial tone or no one on the line when you answer the call.
*6 The flash time depends on your telephone exchange or host PBX. Contact your PBX supplier if necessary. The setting should stay at "**700ms**" unless pressing **[FLASH]** fails to pick up the waiting call.
*7 Generally, the line mode setting should not be adjusted. If "**Line in use**" is not displayed when another phone connected to the same line is in use, you need to change the line mode to "**A**".
*8 This feature allows the unit to automatically adjust the date and time setting when caller information is received. To use this feature, set the date and time first.

7.2. Error Messages

If the unit detects a problem, one of the following messages is shown on the display.

Display message	Cause/solution
Busy or **System is busy. Please try again later.**	● The called handset or base unit is in use. ● Other units are in use and the system is busy. Try again later. ● The handset you are using is too far from the base unit. Move closer and try again. ● The handset's registration may have been canceled. Re-register the handset.
Check tel line	● The supplied telephone line cord has not been connected yet or not connected properly. Check the connections.
Don't use this battery.	● A wrong type of batteries such as Alkaline or Manganese was inserted. Use only the rechargeable Ni-MH batteries.
Error!!	● The handset's registration has failed. Move the handset and base unit away from all electrical appliances and try again.
Insert battery	● The handset was placed on the base unit or charger without batteries. Insert the batteries properly.
Invalid	● There is no handset registered to the base unit matching the handset number you entered. ● The handset is not registered to the base unit. Register the handset.
No link to base. Reconnect AC adaptor.	● The handset has lost communication with the base unit. Move closer to the base unit and try again. ● Unplug the base unit's AC adaptor to reset the unit. Reconnect the adaptor and try again. ● The handset's registration may have been canceled. Re-register the handset.
Phonebook full	● The phonebook memory is full. Erase unnecessary entries.
Store VM access#	● You have not stored the voice mail access number. Store the number.

7.3. Troubleshooting

If you still have difficulties after following the instructions in this section, disconnect the base unit's AC adaptor, then reconnect the base unit's AC adaptor. Remove the batteries from the handset, and then insert the batteries into the handset again.

General use

Problem	Cause/solution
The unit does not work.	● Make sure the batteries are installed correctly. ● Fully charge the batteries. ● Check the connections. ● Unplug the base unit's AC adaptor to reset the unit. Reconnect the adaptor and try again. ● The handset has not been registered to the base unit. Register the handset.
I cannot hear a dial tone.	● The base unit's AC adaptor or telephone line cord is not connected. Check the connections. ● If you are using a splitter to connect the unit, remove the splitter and connect the unit to the wall jack directly. If the unit operates properly, check the splitter. ● Disconnect the base unit from the telephone line and connect the line to a known working telephone. If the working telephone operates properly, contact our service personnel to have the unit repaired. If the working telephone does not operate properly, contact your service provider/telephone company.
The indicator on the handset flashes slowly.	● New messages have been recorded. Listen to the new messages. ● New voice mail messages have been recorded. Listen to the new voice mail messages.

Programmable settings

Problem	Cause/solution
I have changed the display language to a language I cannot read.	● Change the display language.
While programming, the handset starts to ring.	● A call is being received. Answer the call and start again after hanging up.
I cannot register a handset to a base unit.	● The maximum number of handsets (6) is already registered to the base unit. Cancel unused handset registrations from the base unit. ● Place the handset and the base unit away from other electrical appliances.

Battery recharge

Problem	Cause/solution
The handset beeps and/or flashes.	● Battery charge is low. Fully charge the batteries.
I fully charged the batteries, but still flashes or is displayed.	● Clean the charge contacts and charge again. ● It is time to replace the batteries.
I fully charged the batteries, but the operating time seems to be shorter.	● Clean the battery ends (⊕, ⊖) and the charge contacts with a dry cloth, and charge again.

Making/answering calls, intercom

Problem	Cause/solution
Noise is heard, sound cuts in and out.	● You are using the handset or base unit in an area with high electrical interference. Place the base unit and use the handset away from sources of interference. ● Move closer to the base unit. ● If you use a DSL/ADSL service, we recommend connecting a DSL/ADSL filter between the base unit and the telephone line jack. Contact your DSL/ADSL provider for details.
The handset and/or base unit does not ring.	● The ringer volume is turned off. Adjust the ringer volume. ● Night mode is turned on. Turn it off.
I cannot make a call.	● The dialing mode may be set incorrectly. Change the setting. ● The handset is too far from the base unit. Move closer and try again.
I cannot make long distance calls.	● Make sure that you have long distance service.

Caller ID/Talking Caller ID

Problem	**Cause/solution**
Caller information is not displayed.	● You need to subscribe to Caller ID service. Contact your service provider/telephone company for details. ● If your unit is connected to any additional telephone equipment such as a Caller ID box or cordless telephone line jack, plug the unit directly into the wall jack. ● If you use a DSL/ADSL service, we recommend connecting a DSL/ADSL filter between the base unit and the telephone line jack. Contact your DSL/ADSL provider for details. ● The name display service may not be available in some areas. Contact your service provider/telephone company for details. ● Other telephone equipment may be interfering with this unit. Disconnect the other equipment and try again.
Caller information is displayed or announced late.	● Depending on your service provider/telephone company, the unit may display or announce the caller’s information at 2nd ring or later. ● Move closer to the base unit.
Caller information is not announced.	● The handset or base unit’s ringer volume is turned off. Adjust it. ● The Talking Caller ID feature is turned off. Turn it on. ● The number of rings for the answering system is set to **“2”** or **“Toll saver”**. Select a different setting. ● If the base unit and another handset are having an intercom call, your handset does not announce caller information.
The caller list/incoming phone numbers are not edited automatically.	● The Caller ID number auto edit feature is turned off. Turn it on and try again. ● You need to call back the edited number to activate Caller ID number auto edit.
I cannot dial the phone number edited in the caller list.	● The phone number you dialed might have been edited incorrectly (for example, the long distance “1” or the area code is missing). Edit the phone number with another pattern.
Time on the unit is shifted.	● Incorrect time information from incoming Caller ID changes the time. Set the time adjustment to off.
The 2nd caller’s information is not displayed during an outside call.	● In order to use Caller ID, call waiting, or Call Waiting Caller ID (CWID), you must first contact your service provider/telephone company and subscribe to the desired service. After subscribing, you may need to contact your service provider/telephone company again to activate this specific service, even if you already subscribed to both Caller ID and Call Waiting with Caller ID services (CWID).

Answering system

Problem	Cause/solution
The unit does not record new messages.	● The answering system is turned off. Turn it on. ● The message memory is full. Erase unnecessary messages. ● The recording time is set to **"Greeting only"**. Change the setting. ● If you subscribe to the voice mail service, messages are recorded by your service provider/telephone company not your telephone. Change the unit's number of rings setting or contact your service provider/telephone company.
I cannot operate the answering system.	● Someone is using the unit. Wait for the other user to finish. ● A caller is leaving a message. Wait for the caller to finish. ● The handset is too far from the base unit. Move closer.
I cannot operate the answering system remotely.	● You are entering the wrong remote access code. If you forgot the remote access code, store a new remote access code. ● Press each key firmly. ● The answering system is turned off. Turn it on. ● You are using a rotary/pulse telephone. Try again using a touch-tone phone.
While recording a greeting message or listening to messages, the unit rings and recording stops.	● A call is being received. Answer the call and try again later.

Liquid damage

Problem	Cause/solution
Liquid or other form of moisture has entered the handset/base unit.	● Disconnect the AC adaptor and telephone line cord from the base unit. Remove the batteries from the handset and leave to dry for at least 3 days. After the handset/base unit are completely dry, reconnect the AC adaptor and telephone line cord. Insert the batteries and charge fully before use.

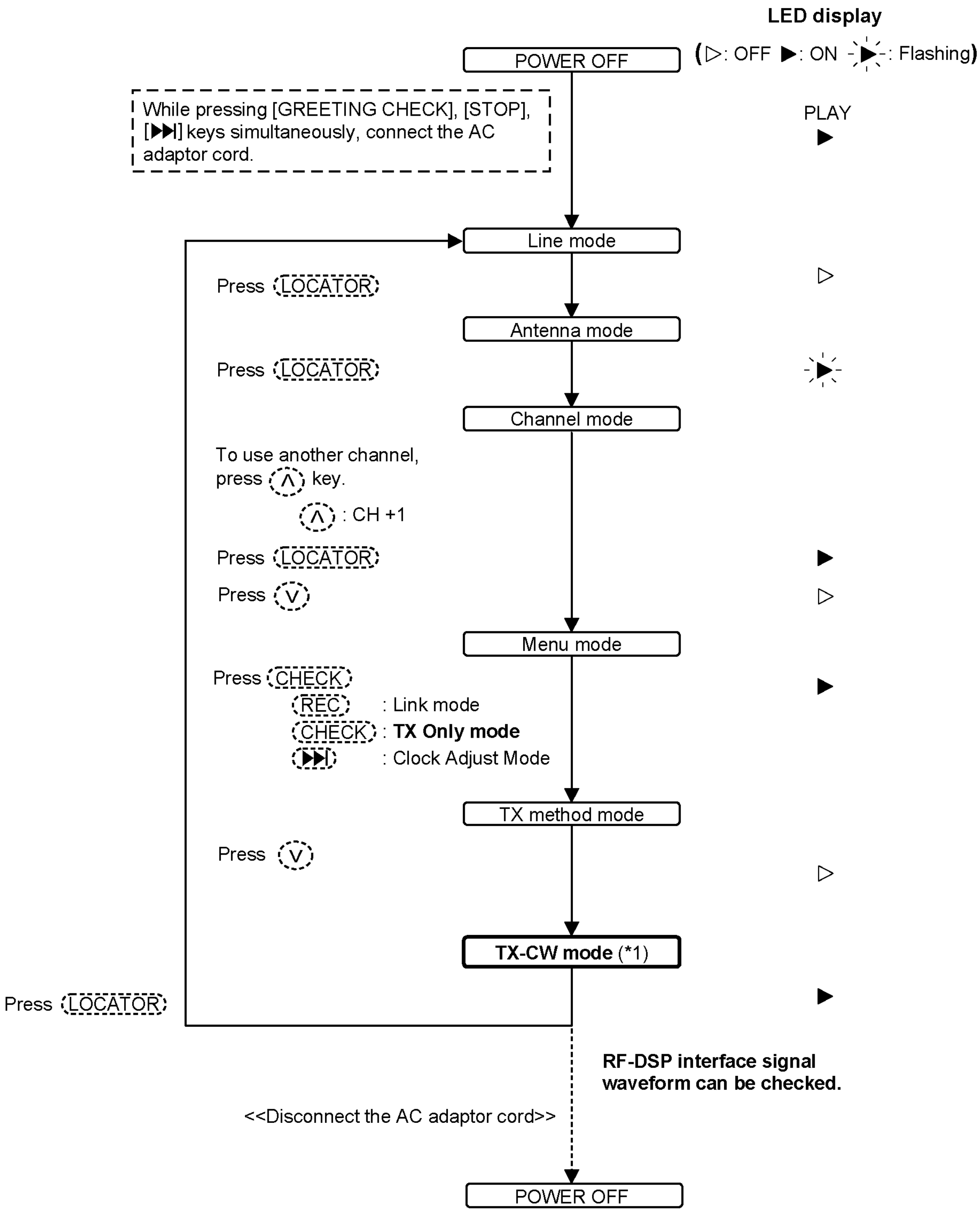
Caution:

- To avoid permanent damage, do not use a microwave oven to speed up the drying process.

8 Test Mode

8.1. Adjustment and Test Mode Flow Chart

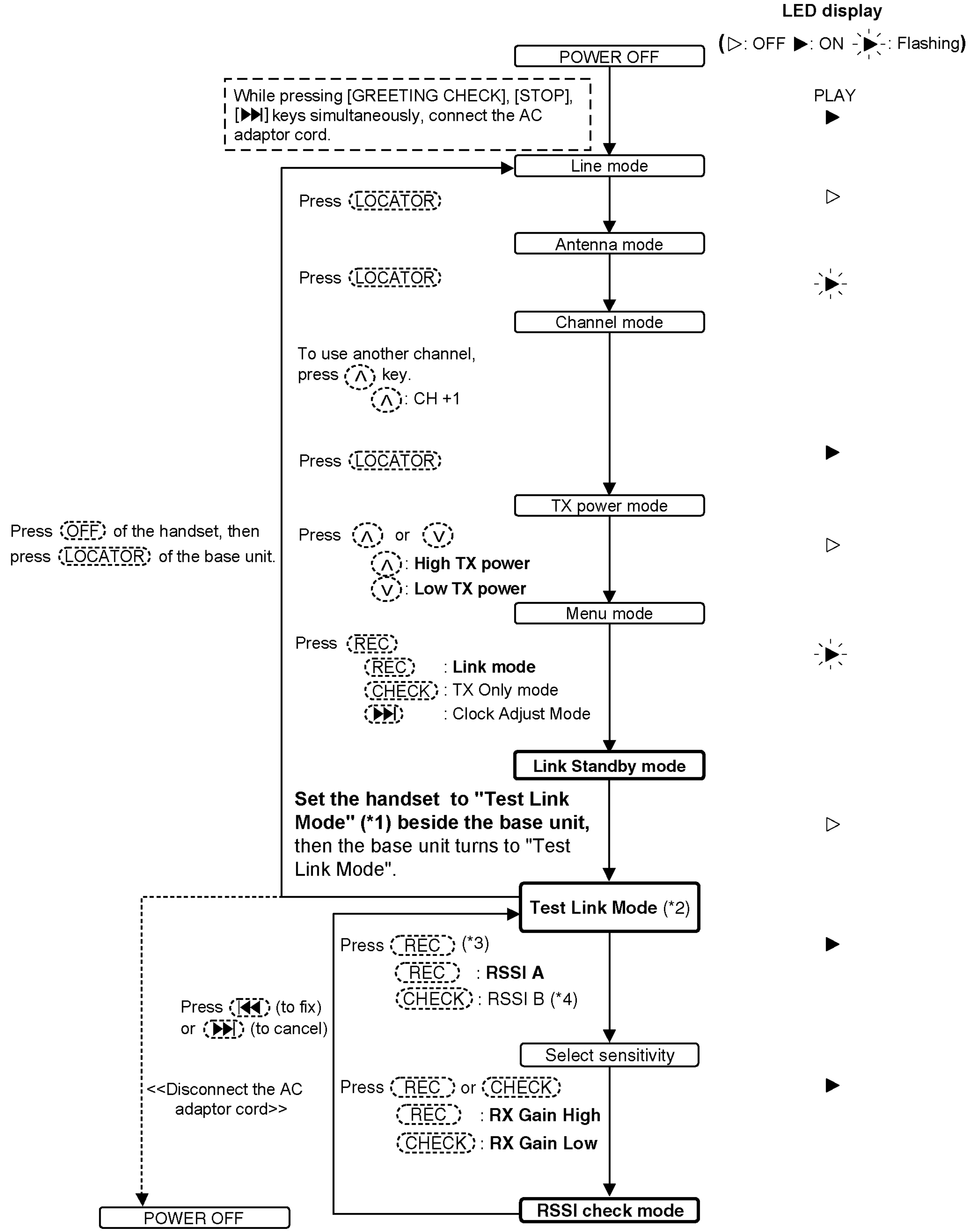
8.1.1. TX-CW Mode for Base Unit



Note:

(*1) Refer to **Check Table for RF part** (P.58).

8.1.2. Test Link Mode for Base Unit



Note:

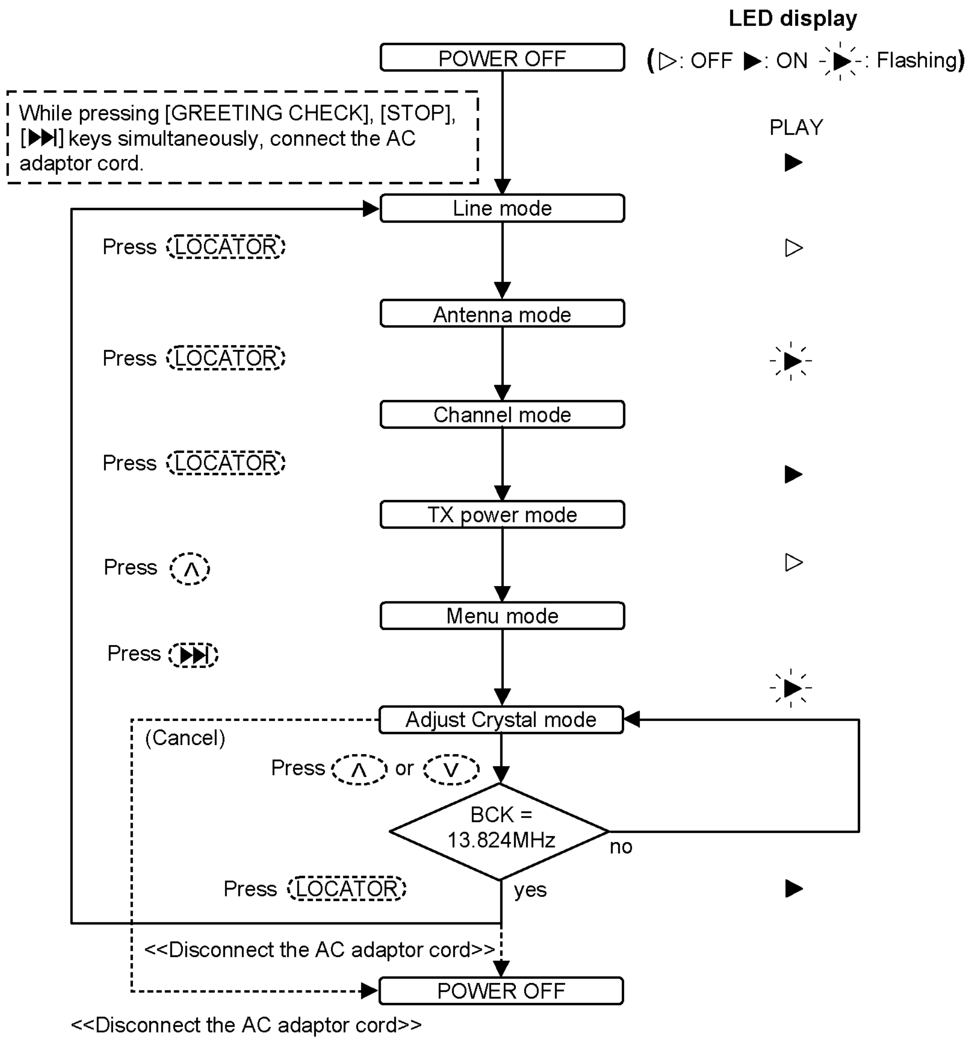
(*1) Refer to **Test Link Mode for Handset** (P.46). If you can not proceed to the next step, refer to **Registering a Handset to a Base Unit** (P.56).

(*2) Refer to **Check Table for RF part** (P.58).

(*3) Operation for regular base unit. Refer to **CHART1** in the **TEST RANGE Check** (P.59).

(*4) for factory use only

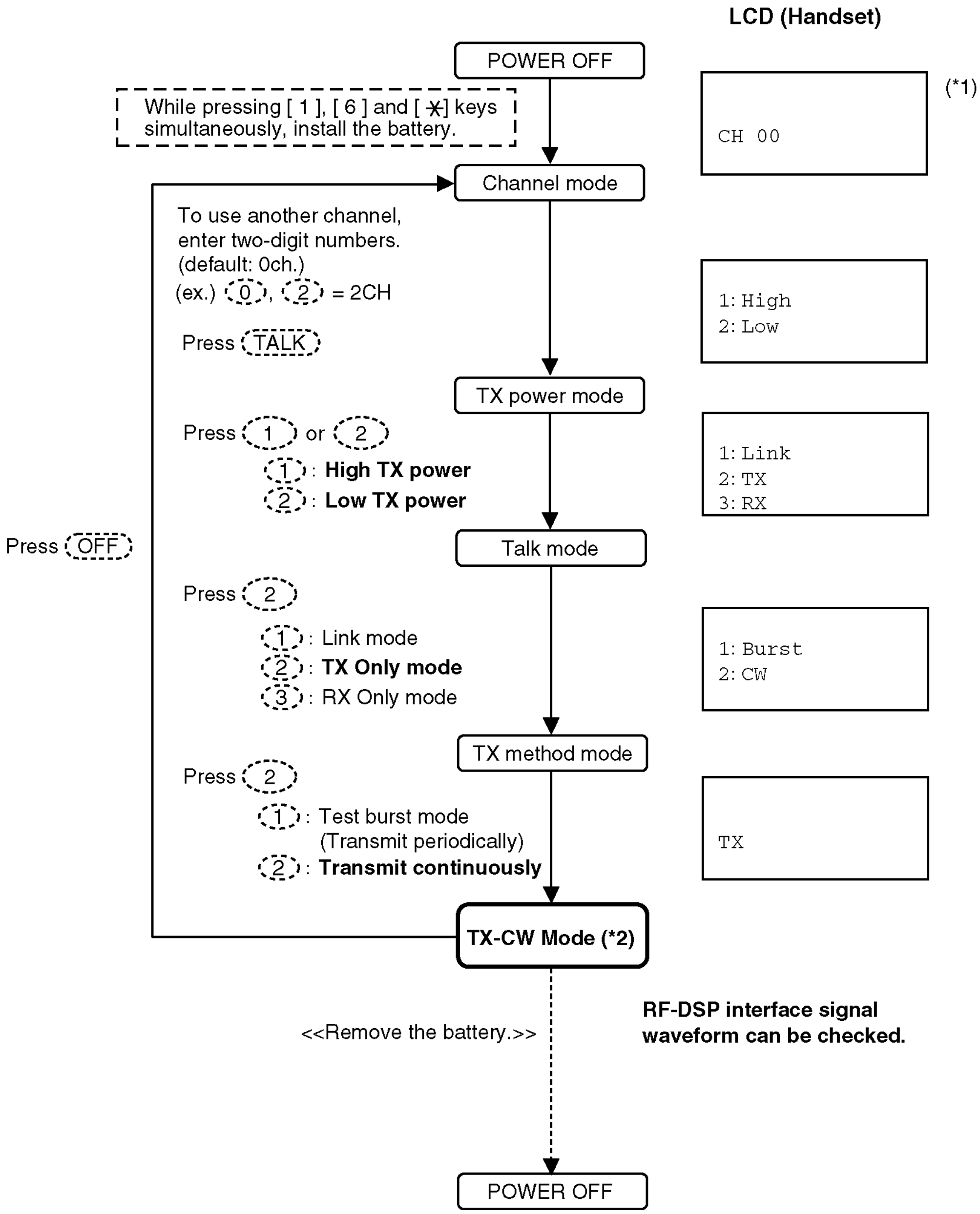
8.1.3. Adjustment Mode for Base Unit



Cross Reference

Check and Adjust Frequency (Base Unit) (P.74)

8.1.4. TX-CW Mode for Handset



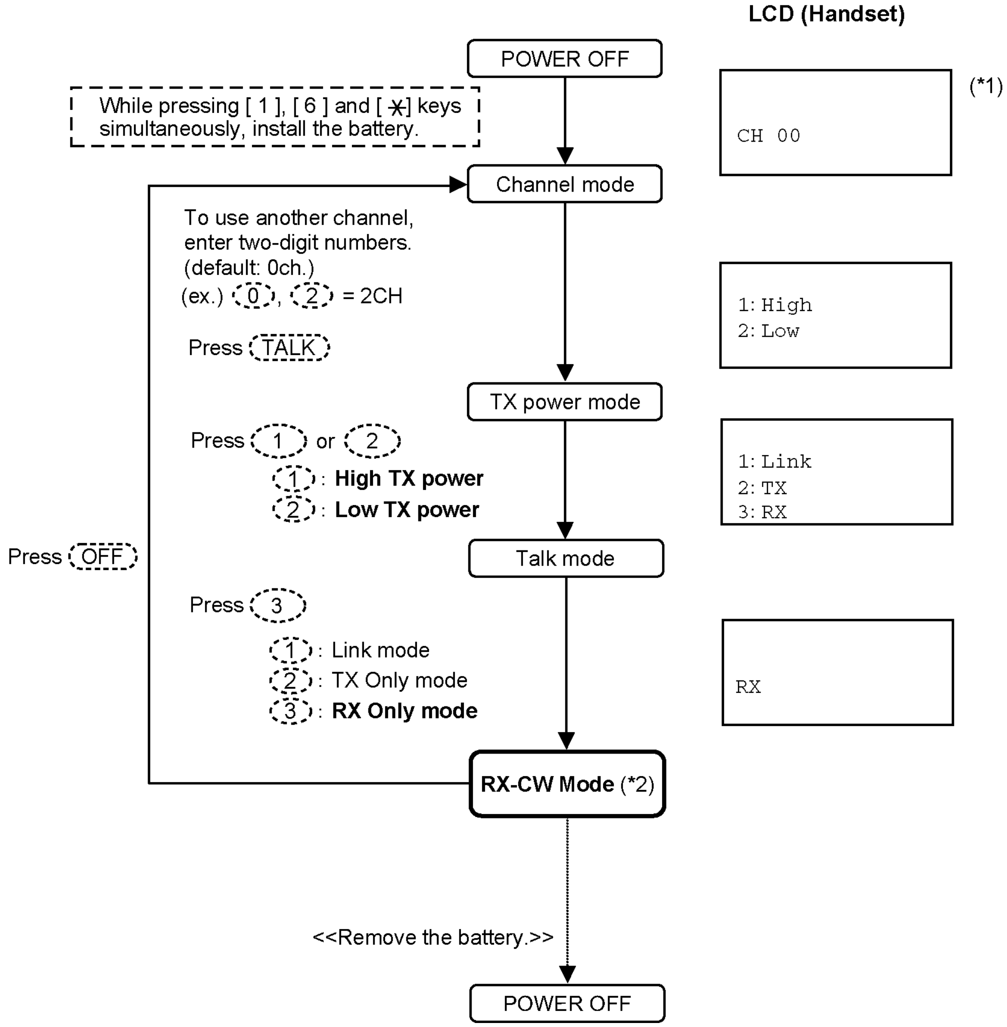
Note:

(*1) LCD displays the Channel number.

(exception: default/ CH00 = 0ch.)

(*2) Refer to **Check Table for RF part** (P.58).

8.1.5. RX-CW Test Mode for Handset

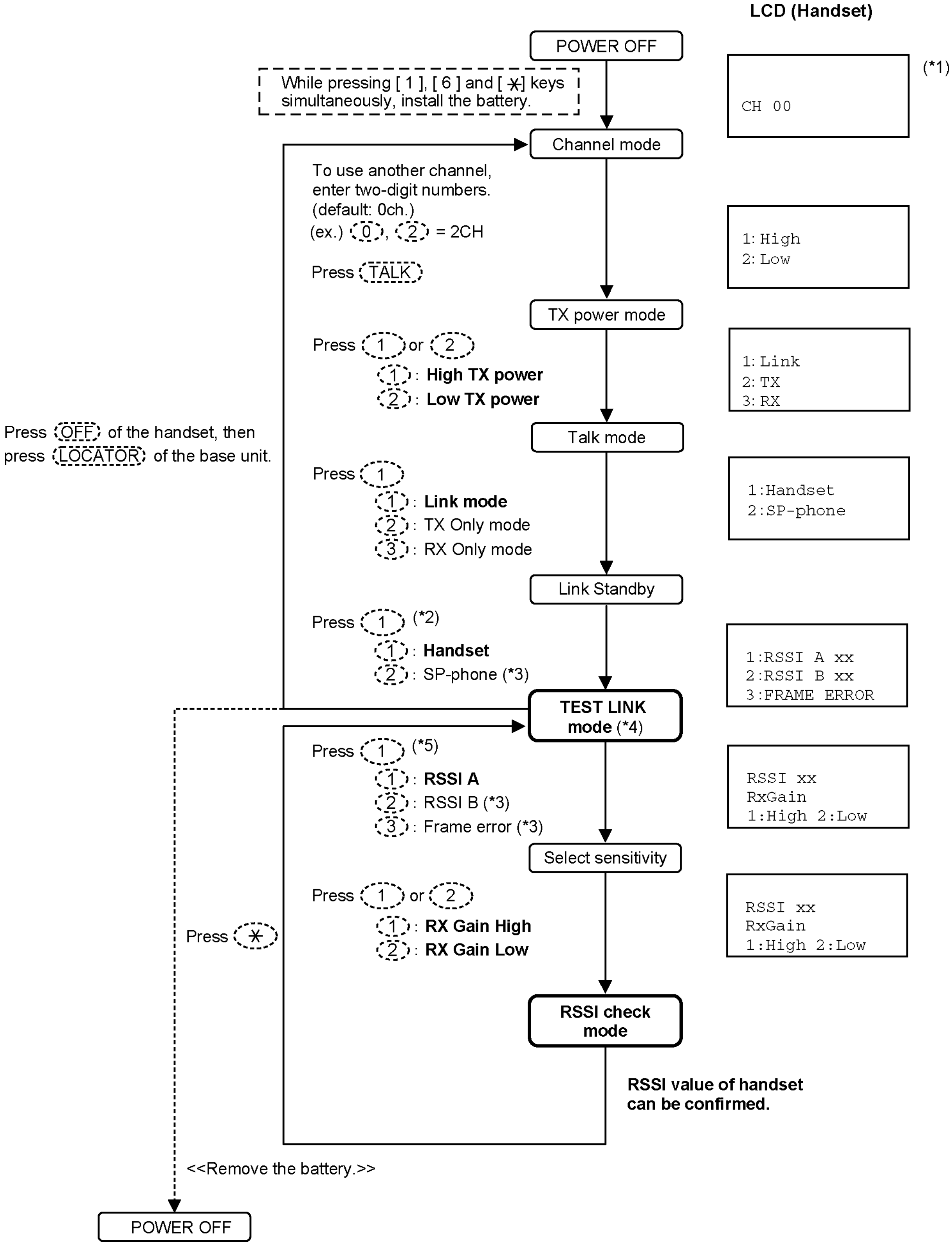


Note:

(*1) LCD displays the Channel number.
(exception: default/ CH00 = 0ch.)

(*2) Refer to **Check Table for RF part** (P.58).

8.1.6. Test Link Mode for Handset



Note:

(*1) LCD displays the Channel number.
(exception: default/ CH00 = 0ch.)

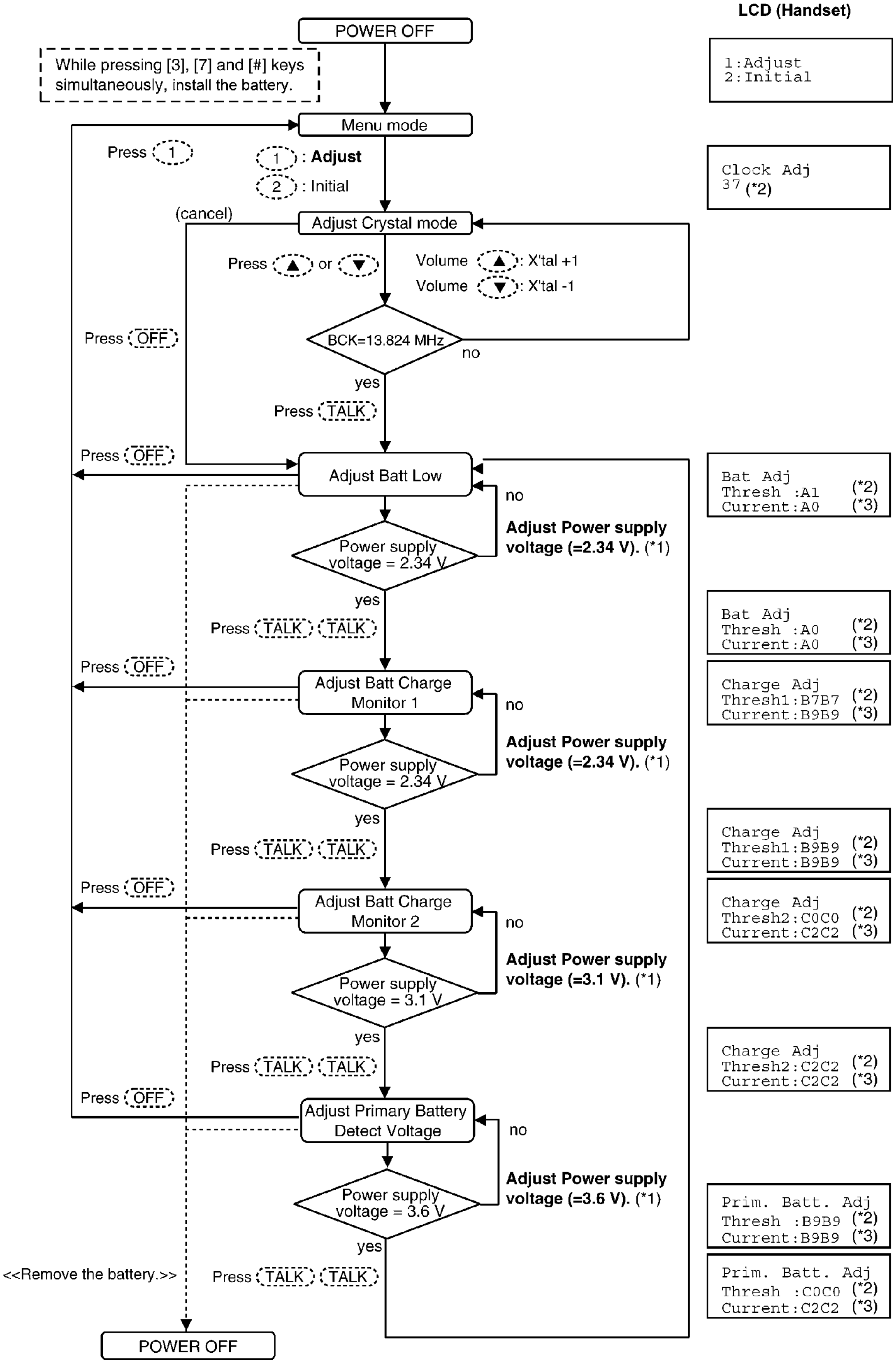
(*2) If can not proceed to the next step, refer to **Registering a Handset to a Base Unit** (P.56).

(*3) for factory use only.

(*4) Refer to **Check Table for RF part** (P.58).

(*5) Operation for regular base unit. Refer to **CHART1** in the **TEST RANGE Check** (P.59).

8.1.7. Adjustment Mode for Handset



Cross Reference

(*1) **Adjust Battery Low Detector Voltage (Handset)** (P.74)

Note:

(*2) These are the default values.

(*3) These values may not be fixed depending on the battery strength.

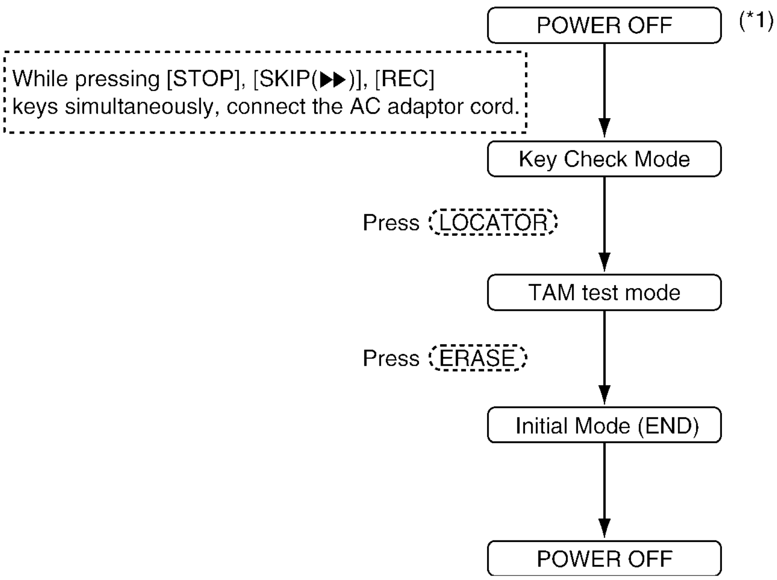
9 Service Mode

9.1. How to Clear User Setting

Units are reset to the Factory settings by this operation (Erase recorded Voice messages, stored Phone numbers, Caller list and etc.).

This operation should not be performed for a usual repair.

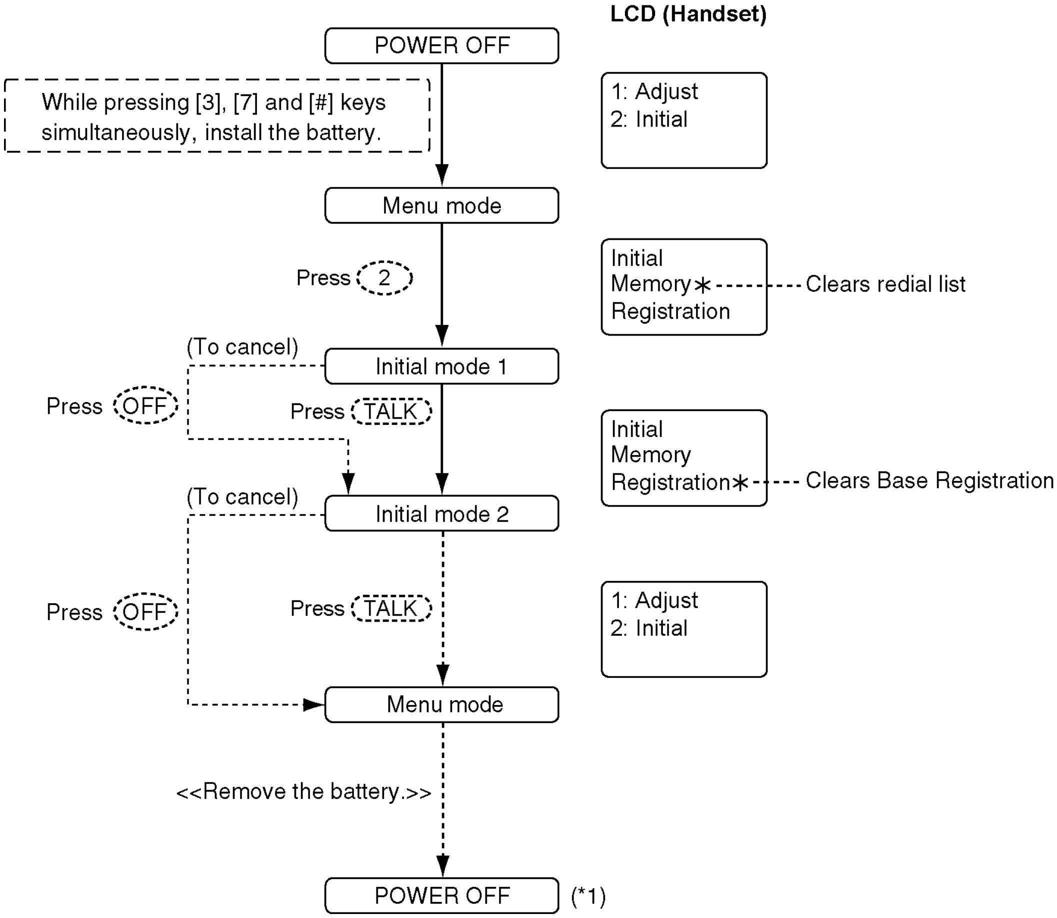
9.1.1. Base Unit



Note:

(*1) Telephone line must be connected.

9.1.2. Handset



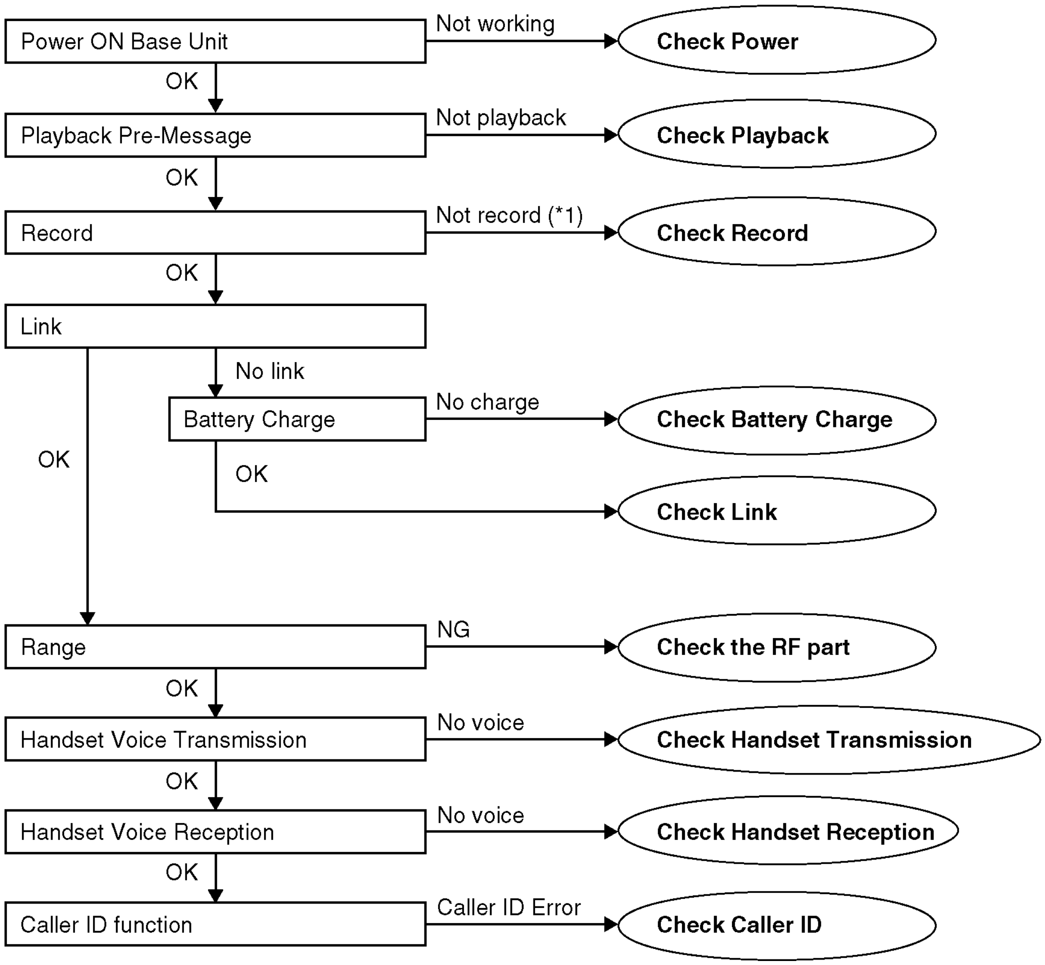
Note:

(*1) Be sure to short the battery terminals of the handset with a lead wire, etc. for 2 seconds for discharge after removing the battery.

10 Troubleshooting Guide

10.1. Troubleshooting Flowchart

FLOW CHART



Cross Reference:

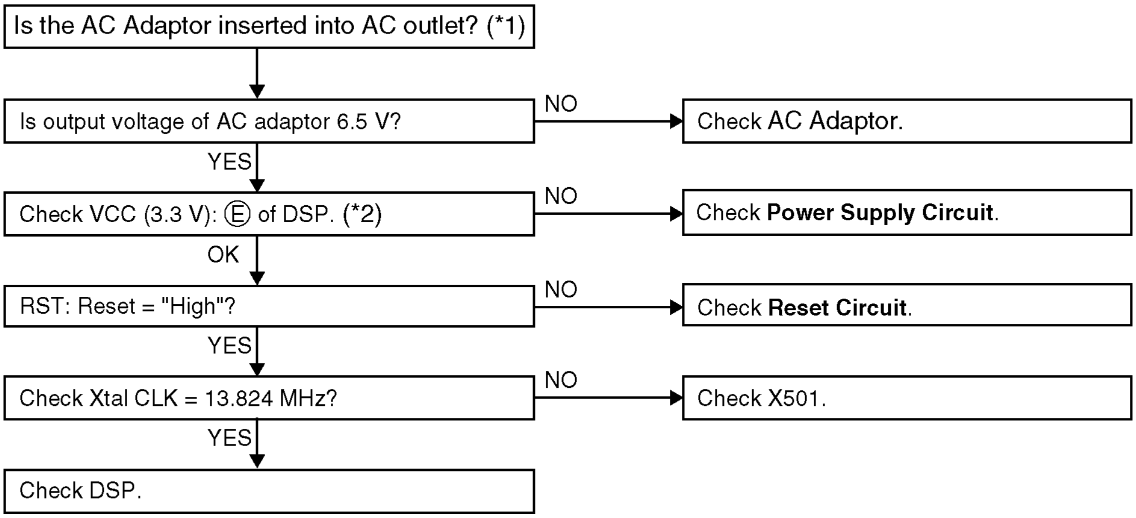
Check Power (P.51)
Check Playback (P.53)
Check Record (P.52)
Check Battery Charge (P.53)
Check Link (P.54)
Check the RF part (P.55)
Check Handset Transmission (P.62)
Check Handset Reception (P.62)
Check Caller ID (P.62)

Note:

(*1) When a user claims that the unit disconnects a call right after the greeting message and no incoming messages can be recorded, this symptom can not be reappeared with TEL simulator in the service center. In this case, try **Check Record** (P.52) item (C), (D).

10.1.1. Check Power

BASE UNIT



Cross Reference:

Power Supply Circuit (P.12)
Reset Circuit (P.14)

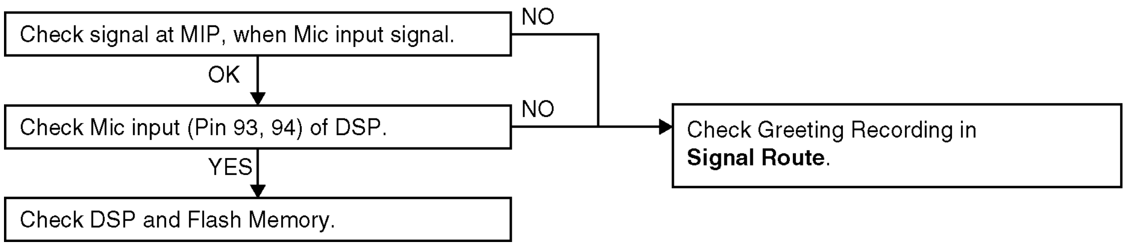
Note:

Flash Memory is IC601.
DSP is IC501.
(*1) Refer to **Specifications** (P.6) for part number and supply voltage of AC adaptor.
(*2) Refer to **Circuit Board (Base Unit_Main)** (P.89).

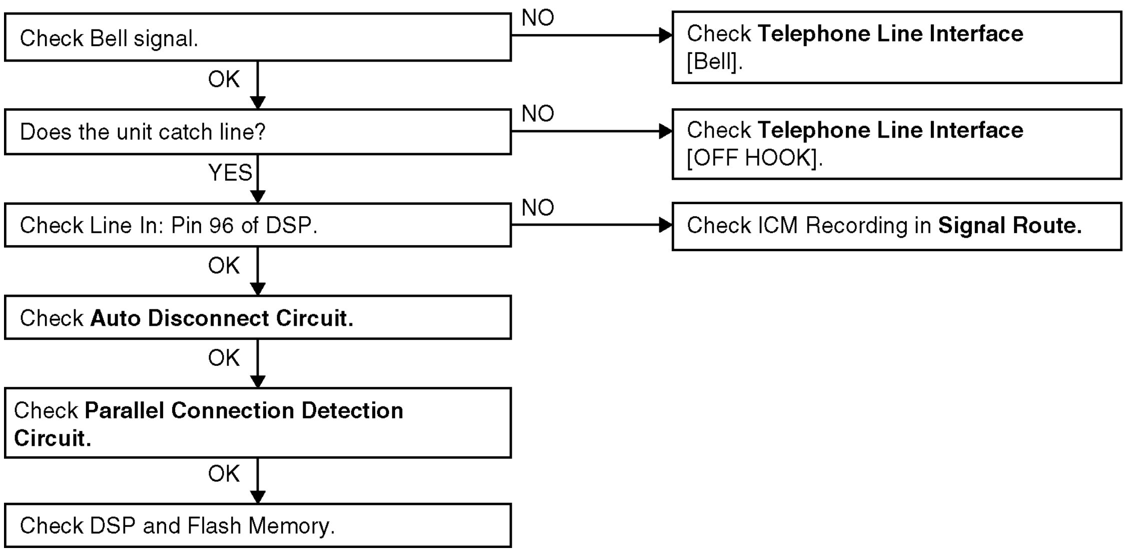
10.1.2. Check Record

BASE UNIT

A) Not record Greeting Message



B) Not record Incoming Message



C) How to change the Auto Disconnect activation (time)

Some Telephone Company lines (fiber or cable) ON Hook and OFF Hook voltages are lower than conventional lines, which may cause a malfunction of Auto Disconnect detection. To solve this problem, try changing the Auto Disconnect activation through the procedures below.

Auto Disconnect detect	CPC detect	PROCEDURE at Stand-by mode
Enable*1		"STOP"+"GREETING CHECK"+"REC" simultaneously
Enable*1 [default]	Disable	"STOP"+"GREETING CHECK"+"VOL. [∧]" simultaneously
Disable*2		"STOP"+"GREETING CHECK"+"VOL. [∨]" simultaneously

Note:

*1 Both Auto Disconnect and CPC don't detect for the first 2 seconds.

*2 If the "Disable" is selected, even if the parallel-connected telephone is OFF HOOK, the line isn't disconnected.

D) How to change the VOX level

It makes easier to detect a small voice (caller) by raising the sensitivity of VOX level. Therefore, the recording of TAM is not turned off during a detection.

VOX Level sensitivity	PROCEDURE
Normal [default]	"STOP"+"LOCATOR"+"VOL. [∧]" simultaneously
6 dB Up	"STOP"+"LOCATOR"+"VOL. [∨]" simultaneously

Cross Reference:

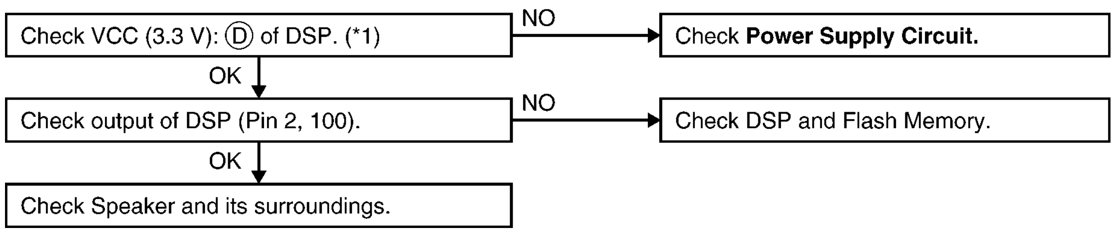
Signal Route (P.28)
Telephone Line Interface (P.15)
Auto Disconnect Circuit (P.16)
Parallel Connection Detect Circuit (P.17)

Note:

Flash Memory is IC601.
DSP is IC501.

10.1.3. Check Playback

BASE UNIT

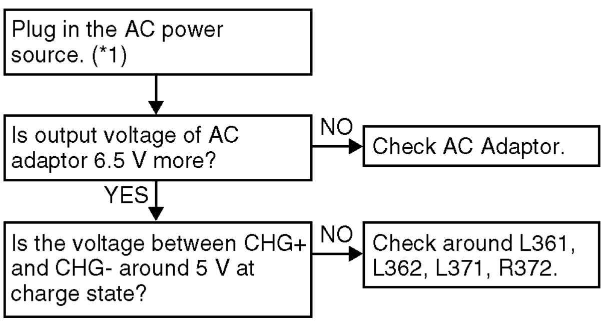


Cross Reference:
Power Supply Circuit (P.12)

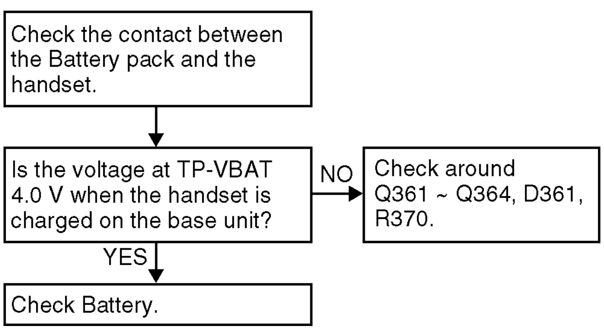
Note:
Flash Memory is IC601.
DSP is IC501.
(*1) Refer to **Circuit Board (Base Unit_Main)** (P.89).

10.1.4. Check Battery Charge

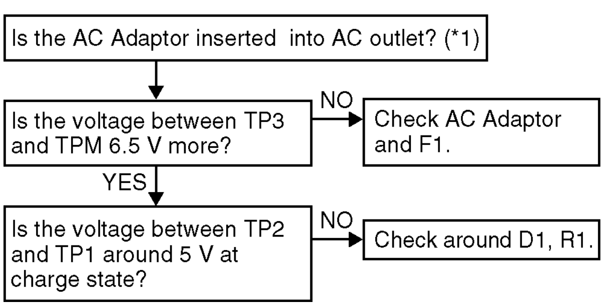
BASE UNIT



HANDSET



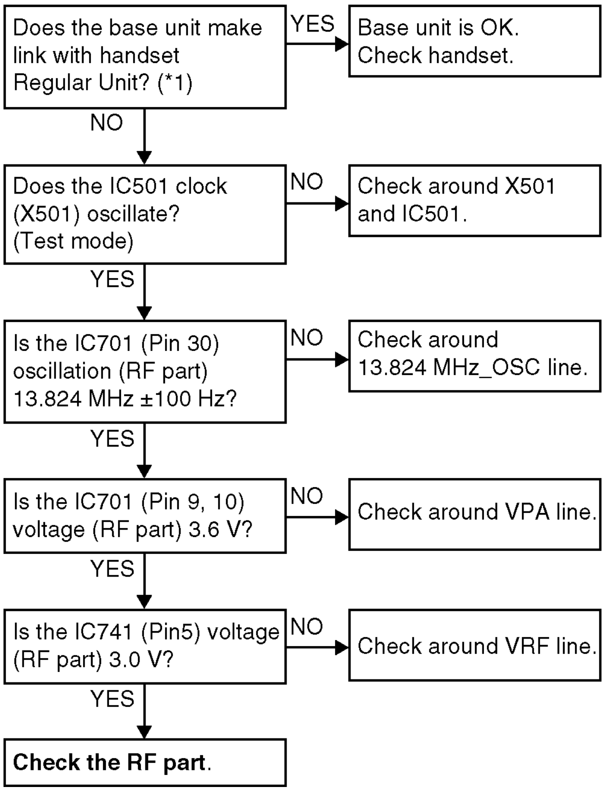
CHARGER UNIT



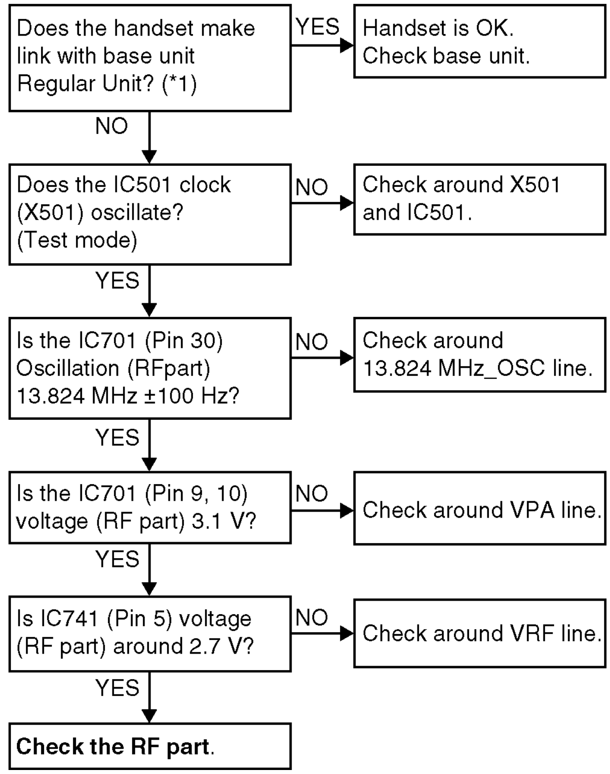
Note:
Flash Memory is IC601.
(*1) Refer to **Specifications** (P.6) for part number and supply voltage of AC adaptor.

10.1.5. Check Link

BASE UNIT



HANDSET



Note:

Flash Memory is IC601.

DSP is IC501.

(*1) Refer to **Finding out the Defective part** (P.55).

Cross Reference:

Check the RF part (P.55)

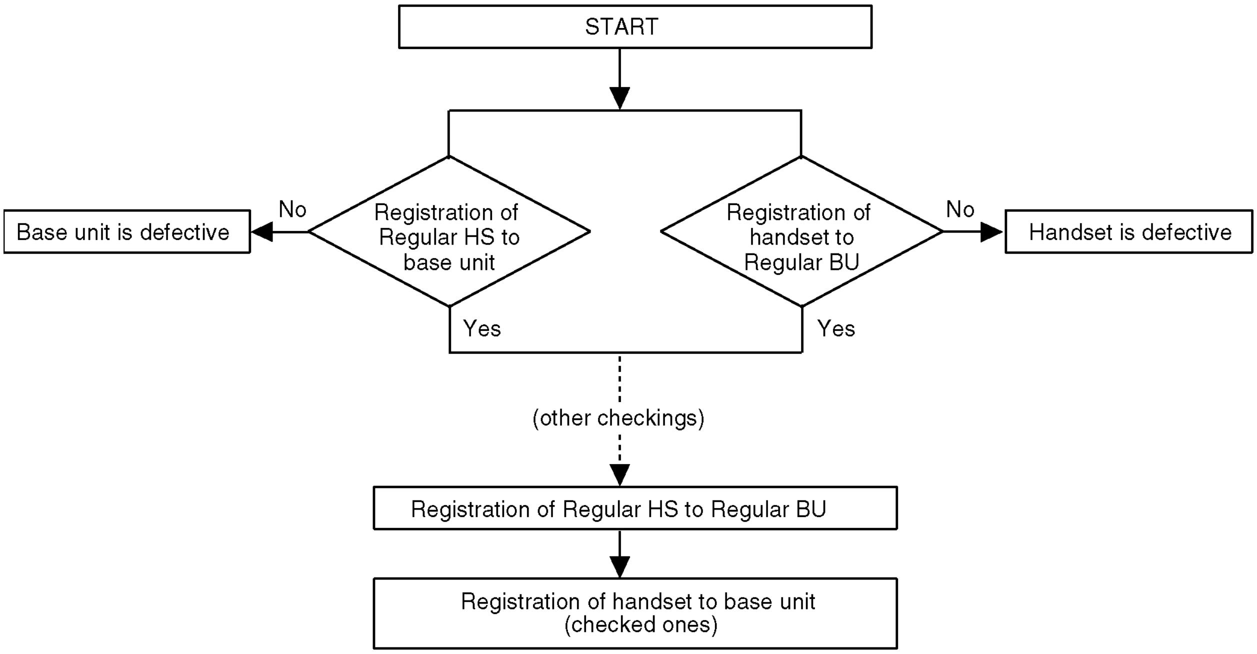
10.1.6. Check the RF part

10.1.6.1. Finding out the Defective part

1. Prepare Regular HS(*1) and Regular BU(*2).
2. a. Re-register regular HS (Normal mode) to base unit (to be checked).
   If this operation fails in some ways, the base unit is defective.
   b. Re-register handset (to be checked) to regular BU (Normal mode).
   If this operation fails in some ways, the handset is defective.

After All the Checkings or Repairing

1. Re-register the checked handset to the checked base unit, and Regular HS to Regular BU.



Note:

(*1) HS: Handset
(*2) BU: Base Unit

10.1.6.1.1. Registering a Handset to a Base Unit

The supplied handset and base unit are pre-registered. If for some reason the handset is not registered to the base unit, register the handset.

1 **Handset:**
【MENU】 → 【♯】【1】【3】【0】

2 **Base unit:**
Press and hold 【LOCATOR】 for 4 seconds until the registration tone sounds.
- If all registered handsets start ringing, press the same button to stop. Then repeat this step.
- The next step should be completed within 90 seconds.

3 **Handset:**
Press 【OK】, then wait until a long beep sounds.

4 【OFF】

Note:
- While registering, **"Base registering"** is displayed on all registered handsets.
- When you purchase an additional handset, refer to the additional handset's installation manual for registration.

10.1.6.1.2. Deregistering a Handset

A handset can cancel its own registration (or the registration of another handset) that is stored in the base unit. This allows the handset to end its wireless connection with the system.

1 【MENU】 → 【♯】【1】【3】【1】

2 【3】【3】【5】 → 【OK】

3 Select the handset you want to cancel by pressing the desired handset number.

10.1.6.1.3. Deregistering All Handsets by the Base Unit

Base unit:

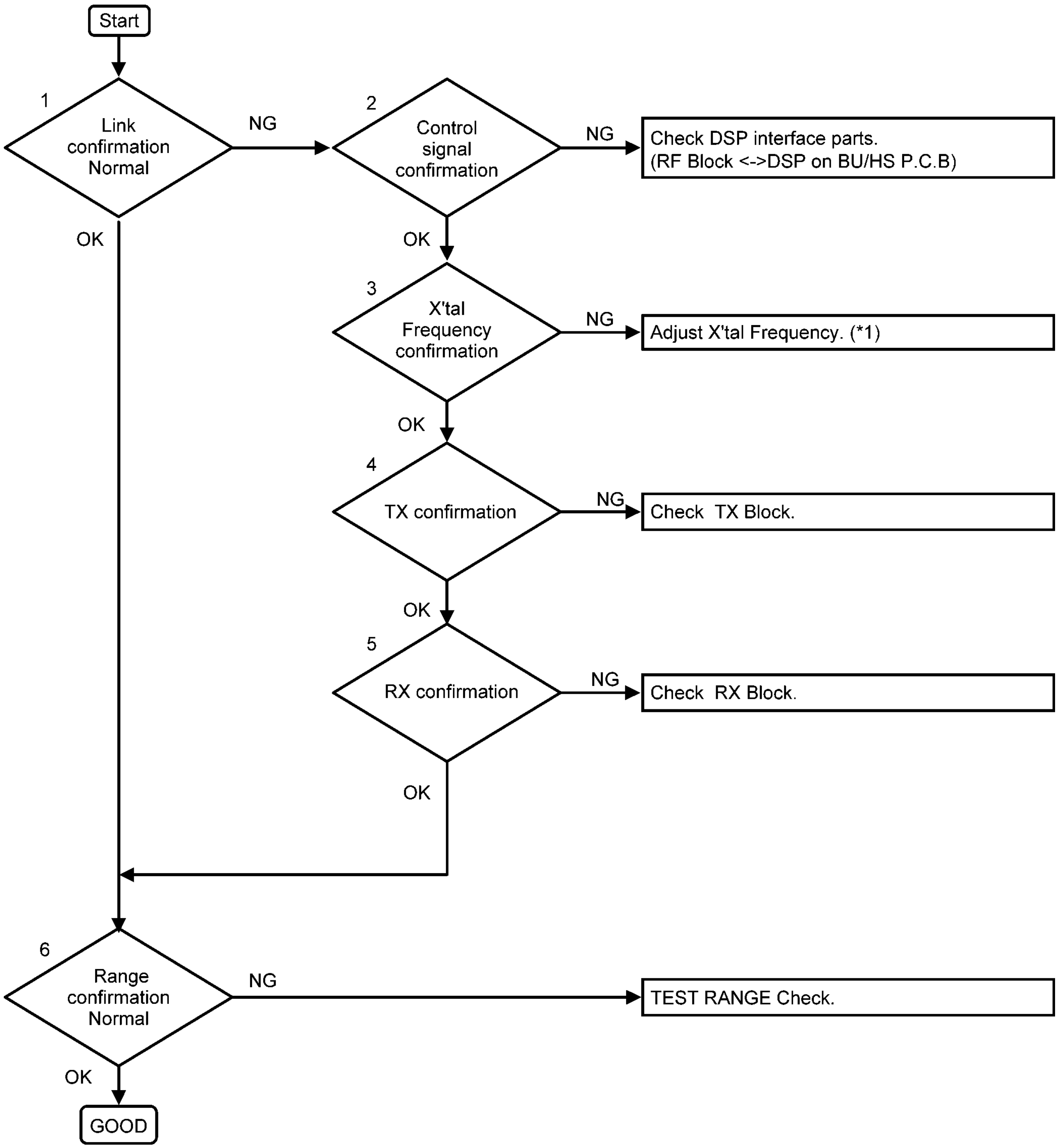
1 Connect the AC adaptor cord while pressing 【LOCATOR/INTERCOM】.

2 Press and hold 【LOCATOR/INTERCOM】 again until a long beep sounds.

Important:
When deregistering all handsets by the base unit, the registration information of all handsets in the base unit is erased.
However the registration information in each handset will still remain.

10.1.6.2. RF Check Flowchart

Each item (1 ~ 6) of RF Check Flowchart corresponds to **Check Table for RF part** (P.58).
Please refer to the each item.



Note:
(*1) Refer to **Things to Do after Replacing IC or X'tal** (P.74).

10.1.6.3. Check Table for RF part

No.	Item	BU (Base Unit) Check	HS (Handset) Check
1	Link Confirmation Normal HS, BU Mode [Normal Mode]	1. Register Regular HS to BU (to be checked). 2. Press [Talk] key of the Regular HS to establish link.	1. Register HS (to be checked) to Regular BU. 2. Press [Talk] key of the HS to establish link.
2	Control signal confirmation HS, BU Mode: [Normal Mode] (*1)	Check DSP interface. (*2)	Check DSP interface. (*3) Check signal at power-on.
3	X'tal Frequency confirmation (*8) HS, BU Mode: [Adjustment] (*4)	Check X'tal Frequency. (13.824000 MHz ±100 Hz)	Check X'tal Frequency. (13.824000 MHz ±100 Hz)
4-1	TX confirmation Regular HS Mode: [Test RX_CW Mode] (*5) ↑ [AIR] BU (to be checked) Mode: [Normal Mode]	1. Place Regular HS 15 cm away from a checked BU. 2. Confirm "RXDATA" waveform of Regular HS by Oscilloscope. Please try to vary Regular HS CH from 00 ch to 04 ch to be matched to the BU dummy CH, then the waveform is verified. (*6)	—
4-2	TX confirmation Regular BU Mode: [Normal Mode] ↑ [AIR] HS (to be checked) Mode: [TEST TX_CW Mode] (*5)	—	1. Place Regular BU 15 cm away from a checked HS. 2. Confirm "RXDATA" waveform of Regular BU by Oscilloscope. (*7) When Regular BU scans TX_CW, RXDATA is LOW.
5-1	RX confirmation Regular HS Mode: [Test TX_CW Mode] (*5) ↓ [AIR] BU (to be checked) Mode: [Normal Mode]	1. Place Regular HS 15cm away from a checked BU. 2. Confirm "RXDATA" waveform of the BU by Oscilloscope. (*7) When the BU scans TX_CW, RXDATA is LOW.	—
5-2	RX confirmation Regular BU Mode: [Normal Mode] ↓ [AIR] HS (to be checked) Mode: [TEST RX_CW Mode] (*5)	—	1. Place Regular BU 15 cm away from a checked HS. 2. Confirm "RXDATA" waveform of the HS by Oscilloscope. Please try to vary the HS CH from 00 ch to 04 ch to be matched to Regular BU dummy CH, then the waveform is verified. (*6)
6	Range Confirmation Normal HS, BU Mode: [Normal Mode]	1. Register Regular HS to BU (to be checked). 2. Press [Talk] key of the Regular HS to establish link. 3. Compare the range of the BU (being checked) with that of the Regular BU.	1. Register HS (to be checked) to Regular BU. 2. Press [Talk] key of the HS to establish link. 3. Compare the range of the HS (being checked) with that of the Regular HS.

Note:

(*1)(*4)(*5) **Adjustment and Test Mode Flow Chart** (P.41)
(*2)(*3) **RF-DSP Interface Signal Wave Form** (P.60)
(*6) **Handset Reference Drawing** (P.76)
(*7) **Base Unit Reference Drawing** (P.75)
(*8) **Things to Do after Replacing IC or X’tal** (P.74)

10.1.6.4. TEST RANGE Check

Circuit block which range is defective can be found by the following check.

Item	BU (Base Unit) Check	HS (Handset) Check
Range Confirmation TX TEST (TX Power check) HS, BU Mode: [Test Link Mode] (*1)	1. Register Regular HS to BU (to be checked). 2. Set BU to “Test Link mode”. 3. Set Regular HS to “Test Link mode”. *Set TX Power and RX Sensitivity of the BU and the Regular HS by CHART1. * At distance of about 5 m between HS and BU, Link OK = TX Power of the BU is OK. No Link = TX Power of the BU is NG.	1. Register HS (to be checked) to Regular BU. 2. Set Regular BU to “Test Link mode”. 3. Set HS to “Test Link mode”. *Set TX Power and RX Sensitivity of the HS and the Regular BU by CHART1. * At distance of about 5 m between HS and BU, Link OK = TX Power of the HS is OK. No Link = TX Power of the HS is NG.
Range Confirmation RX TEST (RX sensitivity check) HS, BU Mode: [Test Link Mode] (*1)	1. Register Regular HS to BU (to be checked). 2. Set BU to “Test Link mode”. 3. Set Regular HS to “Test Link mode”. *Set TX Power and RX Sensitivity of the BU and Regular HS by CHART1. * At distance of about 5 m between HS and BU, Link OK= RX Sensitivity of the BU is OK. No Link = RX Sensitivity of the BU is NG.	1. Register HS (to be checked) to Regular BU. 2. Set Regular BU to “Test Link mode”. 3. Set HS to “Test Link mode”. * Set TX Power and RX Sensitivity of Checking_HS and Regular_BU by CHART1. * At distance of about 5 m between HS and BU, Link OK= RX Sensitivity of the HS is OK. No Link = RX Sensitivity of the HS is NG

CHART1: Setting of TX Power and RX Sensitivity in Range Confirmation TX TEST, RX TEST

	BU (to be checked)		Regular_HS	
	TX Power	RX Sens.	TX Power	RX Sens.
BU (Base Unit) TX Power Check	High	High	High	**Low**
BU (Base Unit) RX Sensitivity Check	High	High	**Low**	High

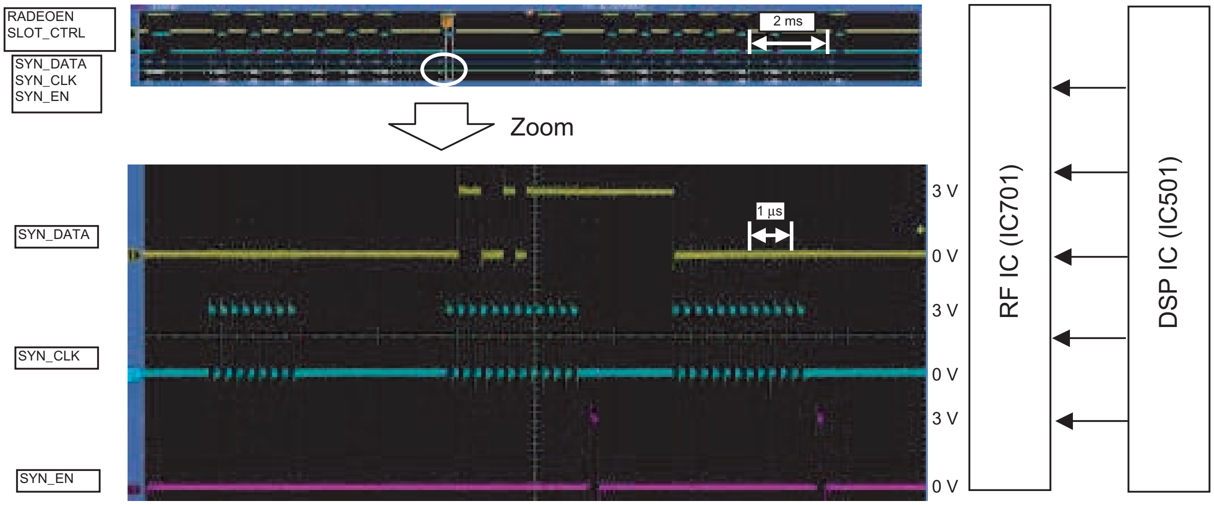
	HS (to be checked)		Regular_BU	
	TX Power	RX Sens.	TX Power	RX Sens.
HS (Handset) TX Power Check	High	High	High	**Low**
HS (Handset) RX Sensitivity Check	High	High	**Low**	High

Note:

(*1) **Adjustment and Test Mode Flow Chart** (P.41)

10.1.6.5. RF-DSP Interface Signal Wave Form

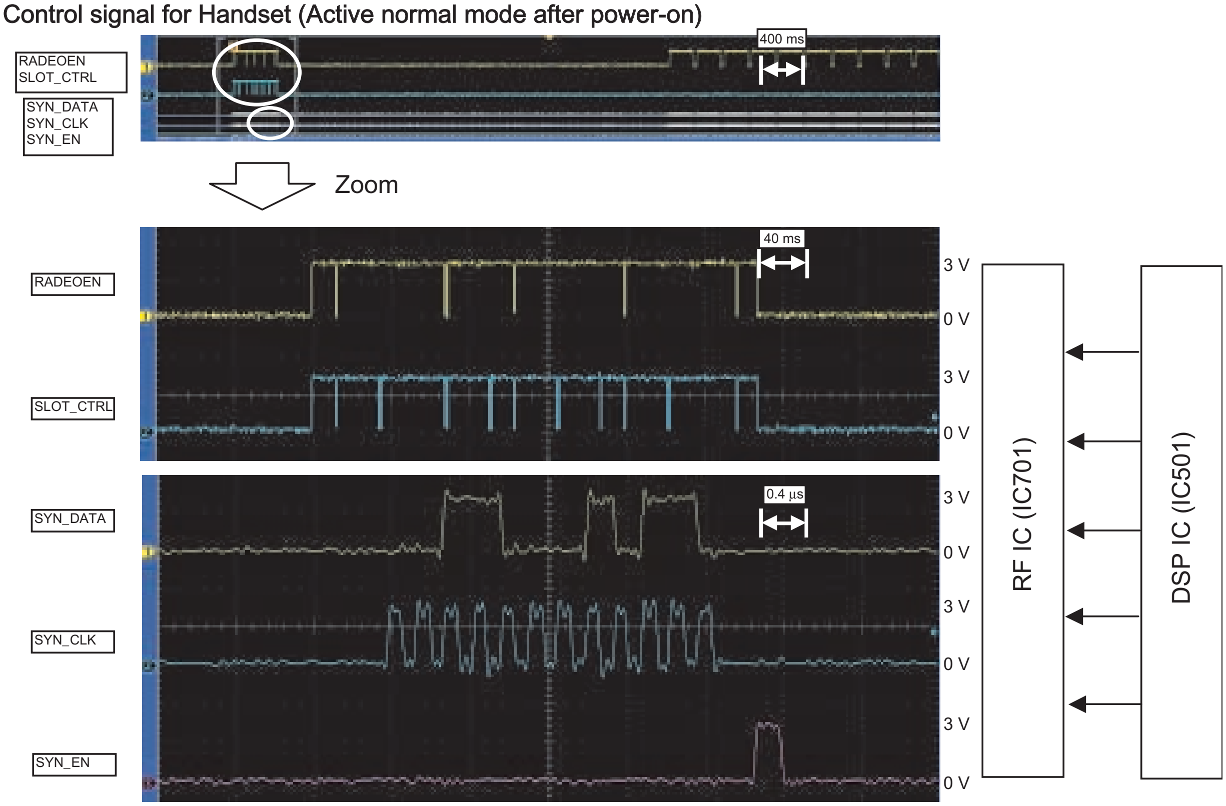
Control signal for Base Unit (Normal mode)



Pin Number

	IC701	IC501 (BU)
RADIOEN	21	24
SLOT_CTRL	22	19
SYN_DATA	23	30
SYN_CLK	24	29
SYN_EN	25	28

Control signal for Handset (Active normal mode after power-on)



Pin Number

	IC701	IC501 (HS)
RADIOEN	21	26
SLOT_CTRL	22	21
SYN_DATA	23	32
SYN_CLK	24	31
SYN_EN	25	30

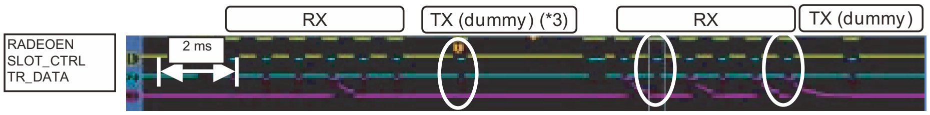
Base Unit TR-DATA Signal (Normal mode)

Base unit sends a dummy slot and receves all 6 slots every frame in normal mode.

ITEM	MODE	
[HS] or [REG HS]	TEST	TX_CW
[REG BU] or [BU]	Normal	RX

Pin Number (Base unit)

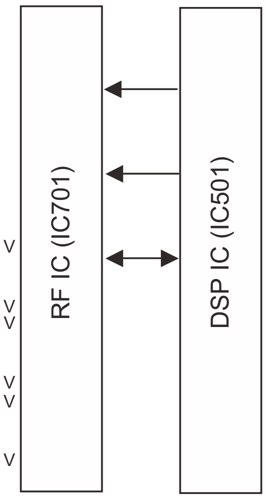
	IC701	IC501 (BU)
RADIOEN	21	24
SLOT_CTRL	22	19
TR (TX)-DATA	23	18
TR (RX)-DATA	23	34



RX-DATA included in TR-DATA

RX-DATA of BU is for checking for TX of HS or RX of BU.
When "TX-CW" mode in Handset, RX-DATA of base unit is LOW. (*1)
In the other case, RX-DATA of base unit is random. (*2)





Handset TR-DATA Signal (RX data in RX CW mode)

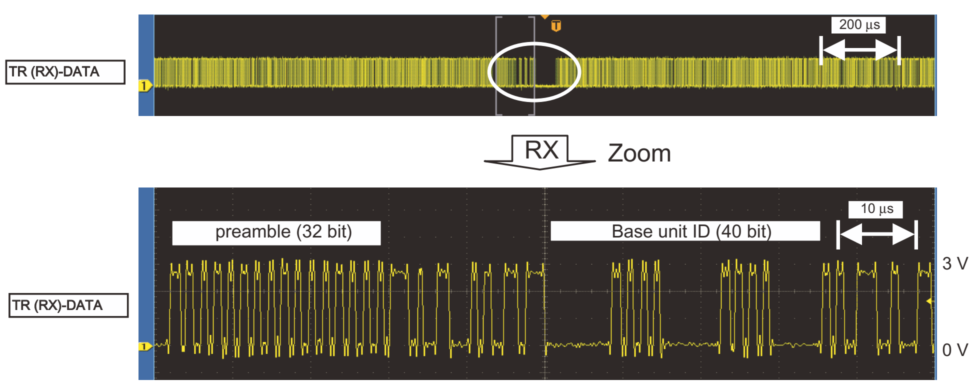
Base unit bursts a dummy slot in normal mode in any channel.
Handset should be worked in test mode in same channel as base unit.

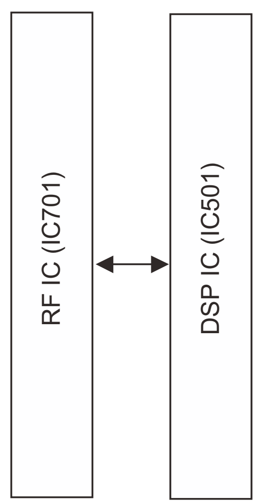
ITEM	MODE	
[HS] or [REG HS]	TEST	RX_CW
[REG BU] or [BU]	Normal	Dummy

Pin Number (Handset)

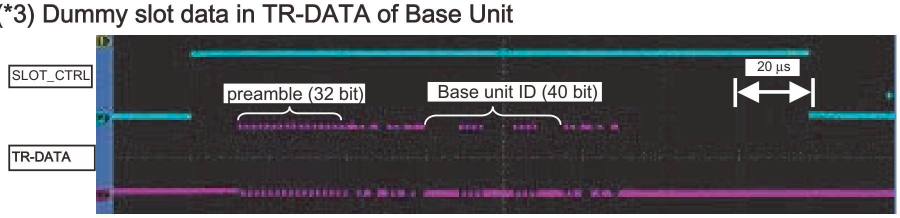
	IC701	IC501 (HS)
TR (RX)-DATA	23	36

RX-DATA of handset is LOW after receiving dummy from base unit.
RX-DATA just before that is same as dummy slot data of base unit.





(*3) Dummy slot data in TR-DATA of Base Unit



10.1.7. Check Handset Transmission

Check MIC of handset.

↓

Check handset Tx in **Signal Route**.

Cross Reference:

Signal Route (P.28)

10.1.8. Check Handset Reception

Check speaker of handset.

↓

Check handset Rx in **Signal Route**.

Cross Reference:

Signal Route (P.28)

Note:

When checking the RF part, Refer to **Check the RF part** (P.55).

10.1.9. Check Caller ID

BASE UNIT

Did bell ring? (Message indicator blinks)

NO → Check bell signal detection in **Telephone Line Interface**.

YES ↓

Check **Calling Line Identification (Caller ID)/ Call Waiting Caller ID.**

Cross Reference:

Telephone Line Interface (P.15)

Calling Line Identification (Caller ID)/Call Waiting Caller ID (P.18)

Note:

- Make sure the format of the Caller ID service of the Telephone company that the customer subscribes to.
- It is also recommended to confirm that the customer is really a subscriber of the service.

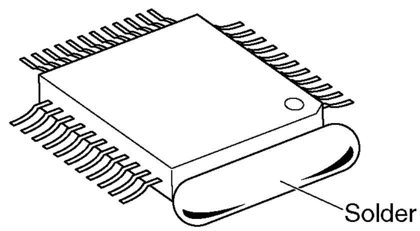
10.2. How to Replace the Flat Package IC

10.2.1. Preparation

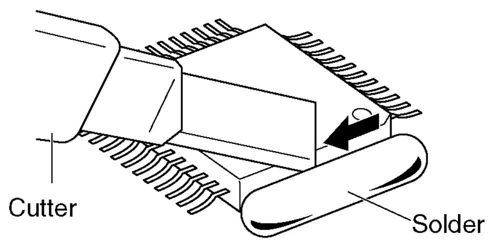
- PbF (: Pb free) Solder
- Soldering Iron
  Tip Temperature of 700 °F ± 20 °F (370 °C ± 10 °C)
  Note: We recommend a 30 to 40 Watt soldering iron. An expert may be able to use a 60 to 80 Watt iron where someone with less experience could overheat and damage the PCB foil.
- Flux
  Recommended Flux: Specific Gravity → 0.82.
  Type → RMA (lower residue, non-cleaning type)
  Note: See **About Lead Free Solder (PbF: Pb free)** (P.4).

10.2.2. How to Remove the IC

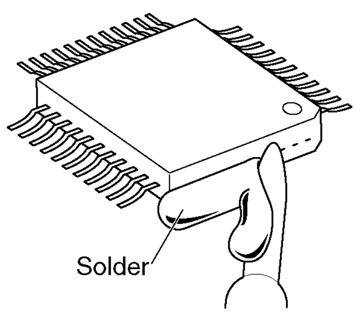
1. Put plenty of solder on the IC pins so that the pins can be completely covered.
   Note:
   If the IC pins are not soldered enough, you may give pressure to the P.C. board when cutting the pins with a cutter.



2. Make a few cuts into the joint (between the IC and its pins) first and then cut off the pins thoroughly.



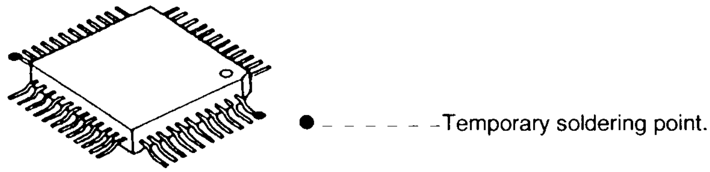
3. While the solder melts, remove it together with the IC pins.



When you attach a new IC to the board, remove all solder left on the board with some tools like a soldering wire. If some solder is left at the joint on the board, the new IC will not be attached properly.

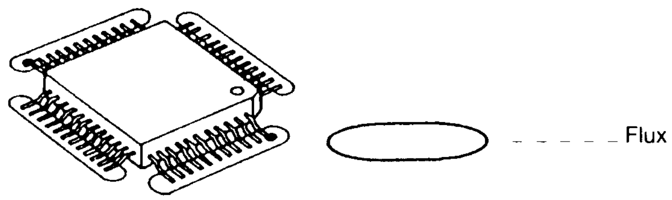
10.2.3. How to Install the IC

1. Temporarily fix the FLAT PACKAGE IC, soldering the two marked pins.

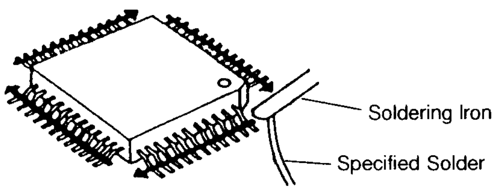


*Check the accuracy of the IC setting with the corresponding soldering foil.

2. Apply flux to all pins of the FLAT PACKAGE IC.

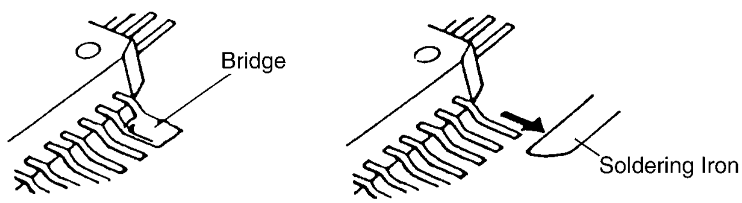


3. Solder the pins, sliding the soldering iron in the direction of the arrow.



10.2.4. How to Remove a Solder Bridge

1. Lightly resolder the bridged portion.
2. Remove the remaining solder along the pins using a soldering iron as shown in the figure below.



10.3. How to Replace the LLP (Leadless Leadframe Package) IC

10.3.1. Preparation

- PbF (: Pb free) Solder
- Soldering Iron
  Tip Temperature of 700 °F ± 20 °F (370 °C ± 10 °C)
  Note:
  We recommend a 30 to 40 Watt soldering iron. An expert may be able to use a 60 to 80 Watt iron where someone with less experience could overheat and damage the PCB foil.
- Hot Air Desoldering Tool
  Temperature: 608 °F ± 68 °F (320 °C ± 20 °C)

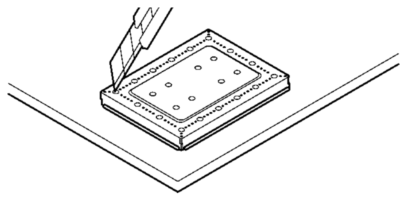
10.3.2. Caution

- To replace the IC efficiently, choose the right sized nozzle of the hot air desoldering tool that matches the IC package.
- Be careful about the temperature of the hot air desoldering tool not to damage the PCB and/or IC.

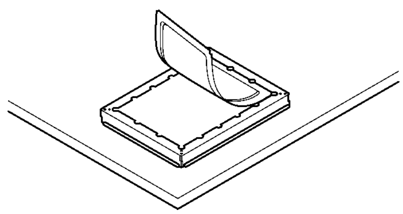
10.3.3. How to Remove the Shield Case

Note:
If you don’t have special tools (ex. Hot air disordering tool), conduct the following operations.

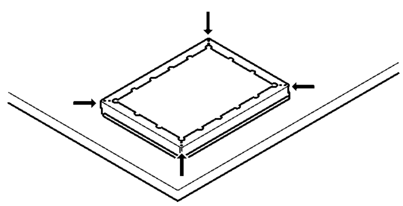
1. Cut the case along perforation.



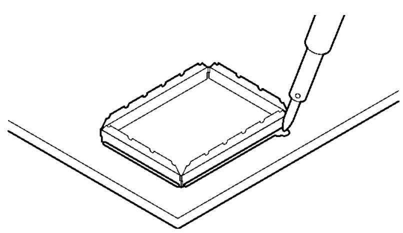
2. Remove the cut part.



3. Cut the four corners along perforation.



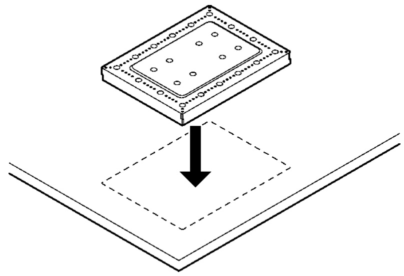
4. Remove the reminds by melting solder.



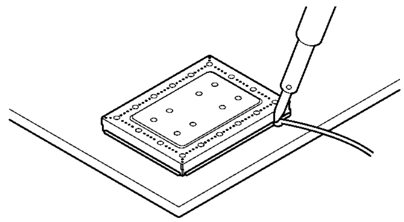
10.3.4. How to Install the Shield Case

Note:
- If you don't have special tools (ex. Hot air disordering tool), conduct the following operations.
- Shield case's No. : PNMC1002Z

1. Put the shield case.

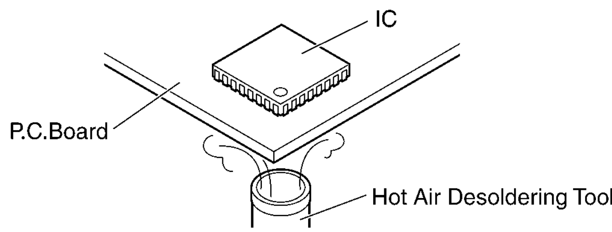


2. Solder the surroundings.

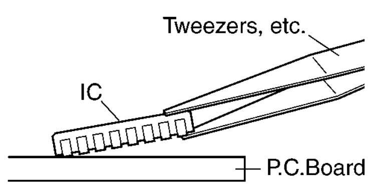


10.3.5. How to Remove the IC

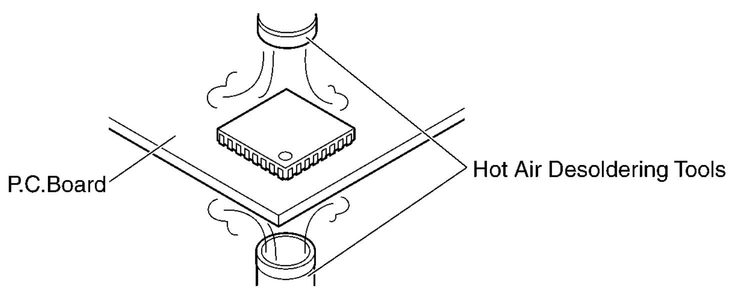
1. Heat the IC with a hot air desoldering tool through the P.C.Board.



2. Pick up the IC with tweezers, etc. when the solder is melted completely.
   Note:
   - Be careful not to touch the peripheral parts with tweezers, etc. They are unstable.



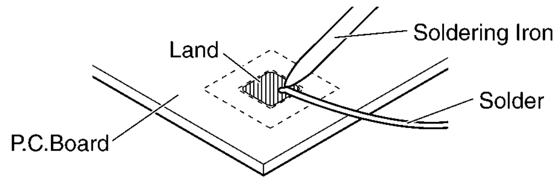
When it is hard to melt the solder completely, heat it with a hot air desoldering tool through the IC besides through the P.C.Board.



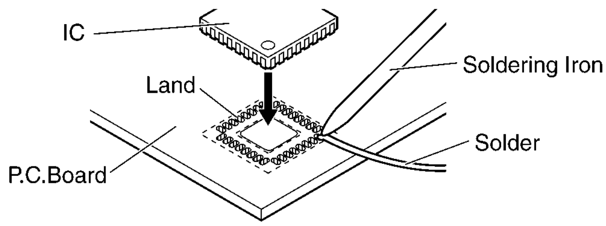
3. After removing the IC, clean the P.C.Board of residual solder.

10.3.6. How to Install the IC

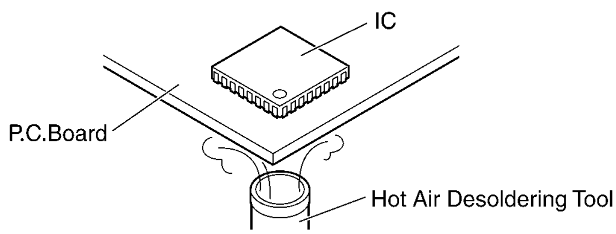
1. Place the solder a little on the land where the radiation GND pad on IC bottom is to be attached.



2. Place the solder a little on the land where IC pins are to be attached, then place the IC.
   Note:
   • When placing the IC, the positioning should be done very carefully.



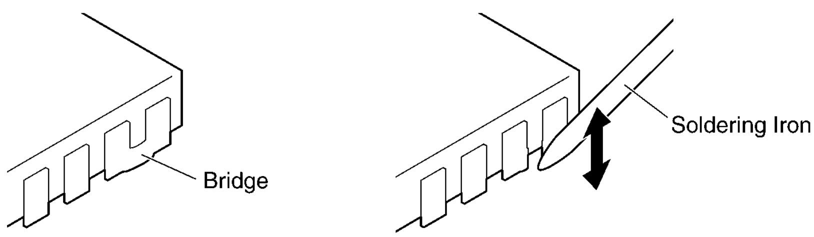
3. Heat the IC with a hot air desoldering tool through the P.C.Board until the solder on IC bottom is melted.
   Note:
   • Be sure to place it precisely, controlling the air volume of the hot air desoldering tool.



4. After soldering, confirm there are no short and open circuits with visual inspection.

10.3.7. How to Remove a Solder Bridge

When a Solder Bridge is found after soldering the bottom of the IC, remove it with a soldering iron.



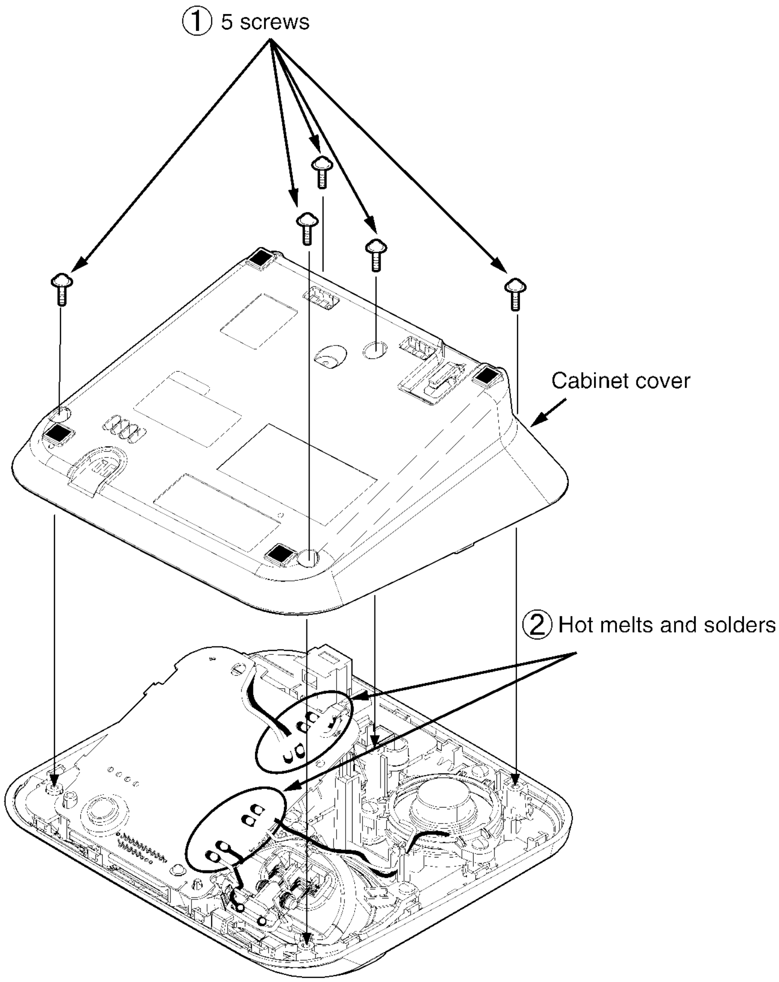
11 Disassembly and Assembly Instructions

11.1. Disassembly Instructions

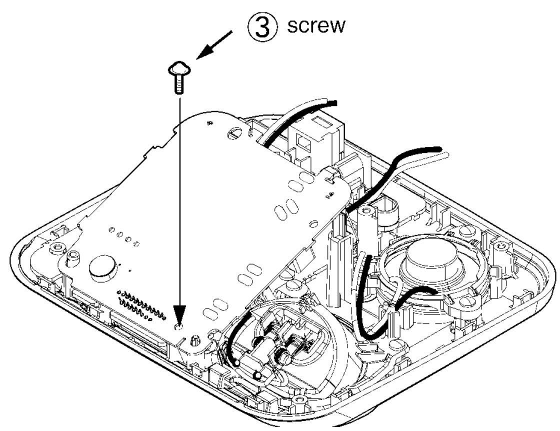
11.1.1. Base Unit

① **Remove the 5 screws to remove the cabinet cover.**

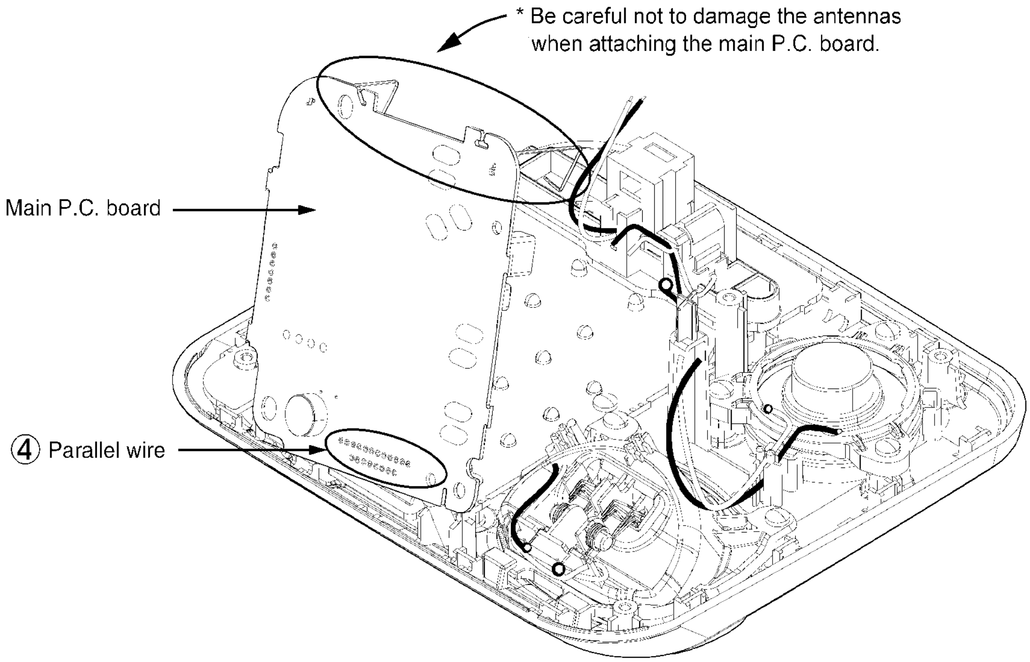
② **Remove the hot melts and solders.**



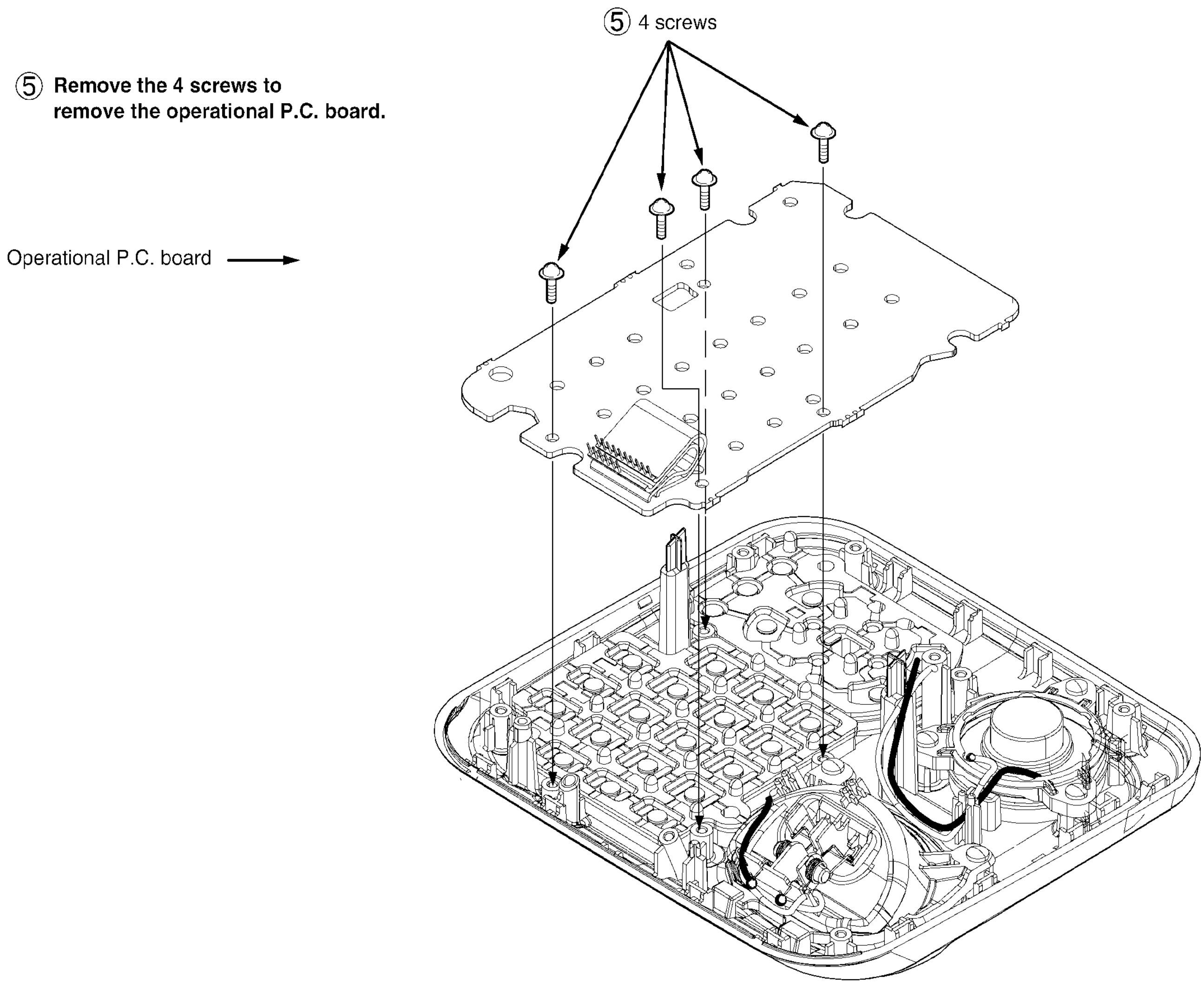
③ **Remove the screw.**



④ **Remove the parallel wire to remove the main P.C. board.**

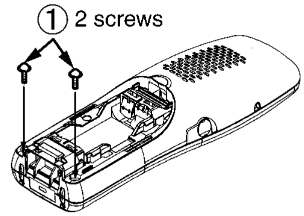


⑤ **Remove the 4 screws to remove the operational P.C. board.**

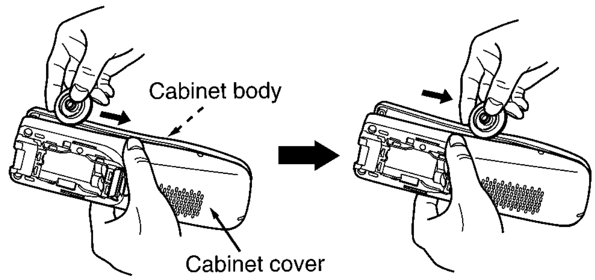


11.1.2. Handset

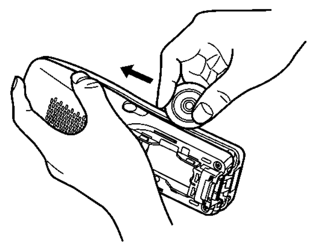
① **Remove the 2 screws.**



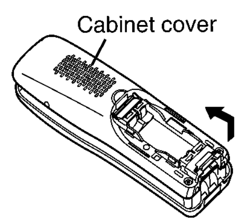
② **Insert a JIG (PQDJ10006Y) between the cabinet body and the cabinet cover, then pull it along the gap to open the cabinet.**



③ **Likewise, open the other side of the cabinet.**



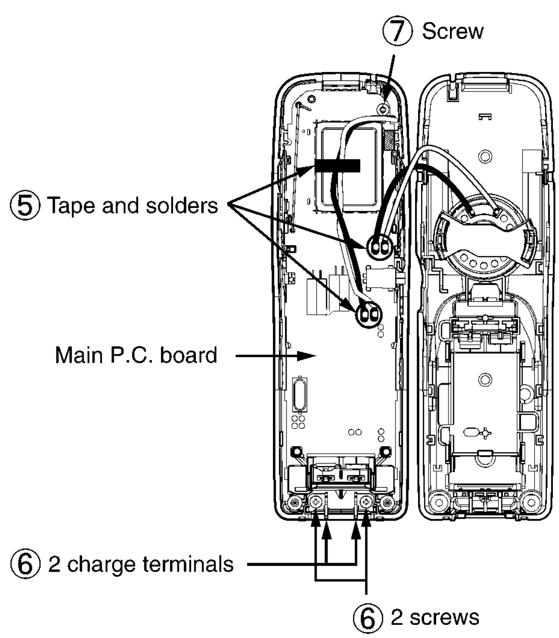
④ **Remove the cabinet cover by pushing it upward.**



⑤ **Remove the tape and solders.**

⑥ **Remove the 2 screws to remove the 2 charge terminals.**

⑦ **Remove the screw to remove the main P. C. board.**

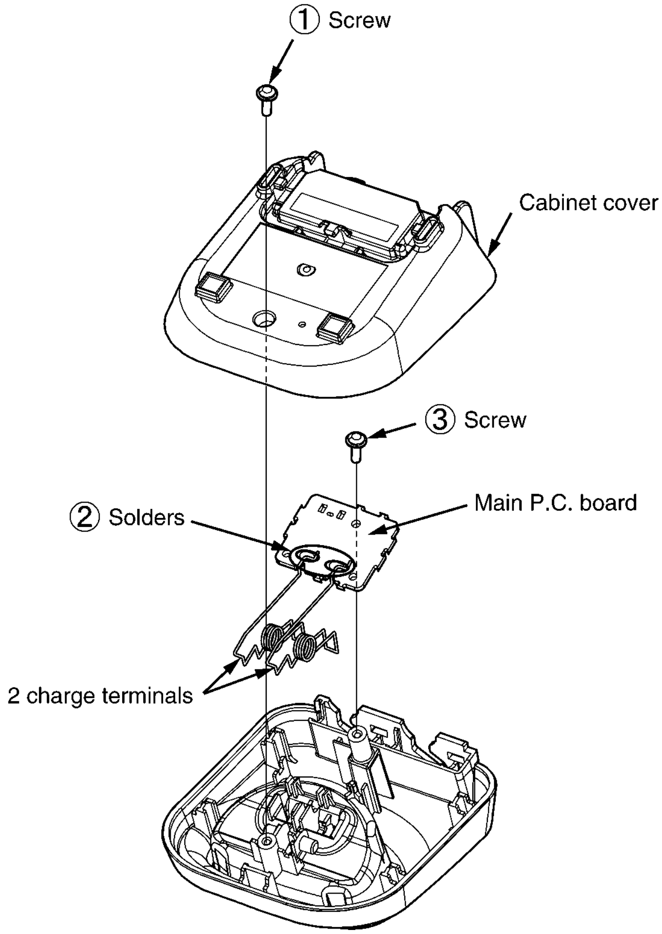


11.1.3. Charger Unit

① **Remove the screw to remove the cabinet cover.**

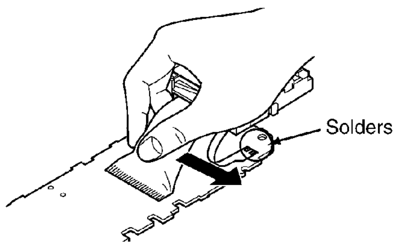
② **Remove the solders to remove the 2 charge terminals.**

③ **Remove the screw to remove the main P.C. board.**



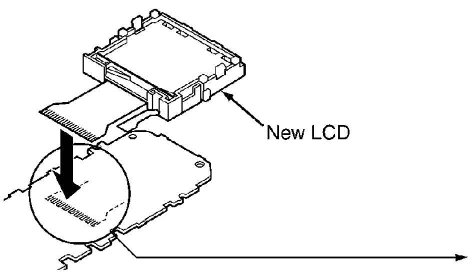
11.2. How to Replace the Handset LCD

①



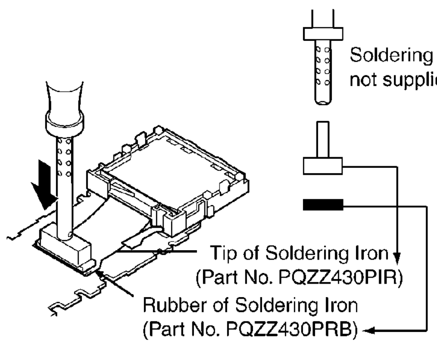
Remove the solders of the FPC (Flexible Printed Circuit), then peel off the FFC (Flexible Flat Cable) from the P.C. board, in the direction of the arrow. Take care to ensure that the foil on the P.C. board is not damaged.

②

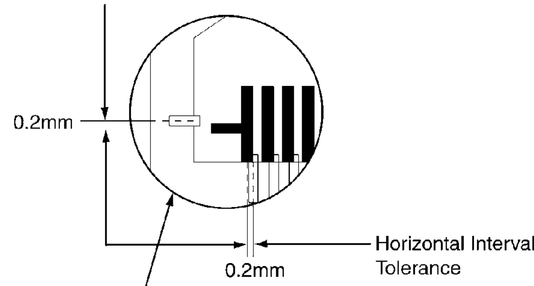


Fit the heatseal of a new LCD.

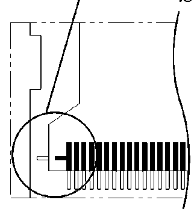
③



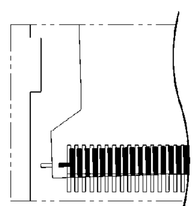
Heatweld with the tip of the soldering iron about 5 to 8 seconds (in case of 60W soldering iron).



If interval tolerance between center lines is less than 0.2mm, it is o.k.

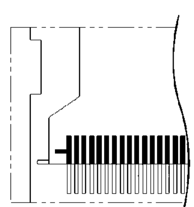


OK



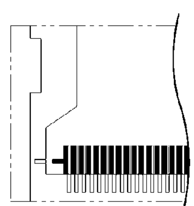
NG

(Inclined)



NG

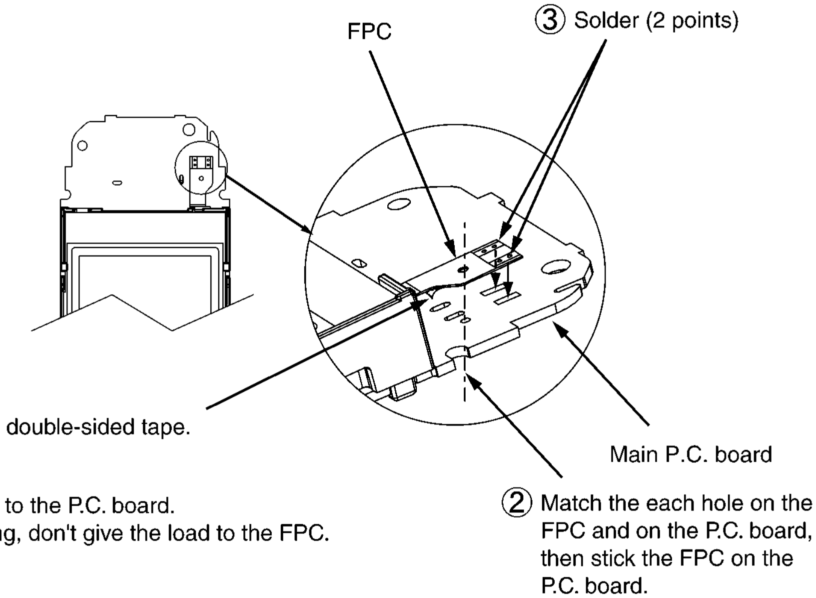
(Vertical interval tolerance is more than 0.2mm.)



NG

(Horizontal interval tolerance is more than 0.2mm.)

④



Solder the FPC to the P.C. board.
* When soldering, don't give the load to the FPC.

12 Measurements and Adjustments

12.1. Things to Do after Replacing IC or X'tal

12.1.1. Preparation

Equipment: Frequency counter
Check Point for measurement: BCK
Checking tolerance: 13.824 MHz ± 100 Hz (Base Unit)/13.824 MHz ± 100 Hz (Handset)

12.1.2. Check and Adjust Frequency (Base Unit)

1. Set up base unit in TEST mode.
2. Press following keys in order to Adjust Crystal mode. [LOCATOR], [LOCATOR], [LOCATOR], [∧], [▶▶]. Check BCK frequency.
3. If the BCK frequency is out of the checking tolerance (± 100 Hz), adjust to Adjustment tolelance (± 30 Hz) by pressing [∧] or [∨] key.
   Adjustment Tolerance: 13.824 MHz ± 30 Hz
4. Press [LOCATOR] key to write the new frequency factor in Memory.
5. Turn the power off. Then this value is available.

Cross Reference:
Adjustment Mode for Base Unit (P.43)

12.1.3. Check and Adjust Frequency (Handset)

1. Set DC power supply to 2.6 V.
2. Set up handset in TEST mode (Adjustment flow).
3. Press [1] key to Adjust Crystal mode ("Clock Adj." is displayed on LCD). Check BCK frequency.
4. If the BCK frequency is out of the checking tolerance (± 100 Hz), adjust to Adjustment tolelance (± 30 Hz) by pressing [▲] or [▼] key.
   Adjustment Tolerance: 13.824 MHz ± 30 Hz
5. Press [TALK] key to write the new frequency factor in EEPROM.
6. Turn the power off. Then this value is available.

Cross Reference:
Adjustment Mode for Handset (P.47)

12.1.4. Adjust Battery Low Detector Voltage (Handset)

After handset's DSP (IC501) or EEPROM (IC541) replacement, Re-writing Battery Low voltage to EEPROM is required.
With following handset Adjustment Flow, adjust DC power supply and DC voltmeter by the procedure below.

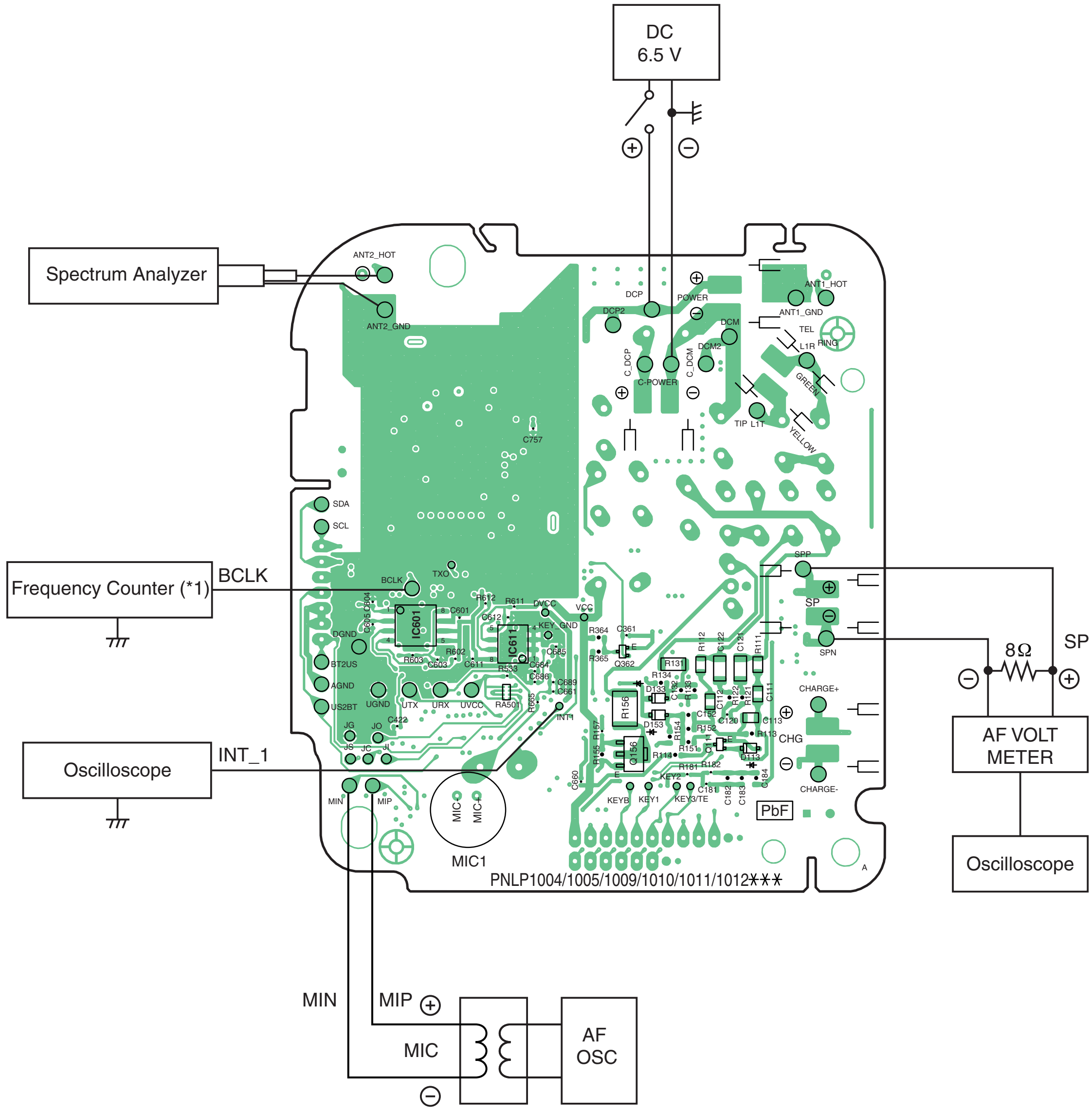
1. Set DC power supply to 2.6 V.
2. Set up handset in TEST mode (Adjustment flow).
3. Press [1] key and [OFF] key to Adjust Batt Low mode. ("Bat Adj." is displayed on LCD)
4. Change the voltage of the DC power supply to 2.34 V accurately. Check the voltage at P.C. board pads because some voltage drops occur due to the usage of long or thin cables.
5. Press [TALK] key twice to write voltage value in EEPROM.
6. Press [TALK] key twice to write charge value 1 in EEPROM.
7. Change the voltage of the DC power supply to 3.1 V accurately.
8. Press [TALK] key twice to write charge value 2 in EEPROM.
9. Change the voltage of the DC power supply to 3.6 V accurately.
10. Press [TALK] key twice to write primary battery detect value in EEPROM.
11. Turn the power off. Then this value is available.

Note:
Refer to **Handset Reference Drawing** (P.76) for connection of DC power supply and voltmeter.

Cross Reference:
Adjustment Mode for Handset (P.47)

12.2. Base Unit Reference Drawing

When connecting the simulator equipment for checking, please refer to below.

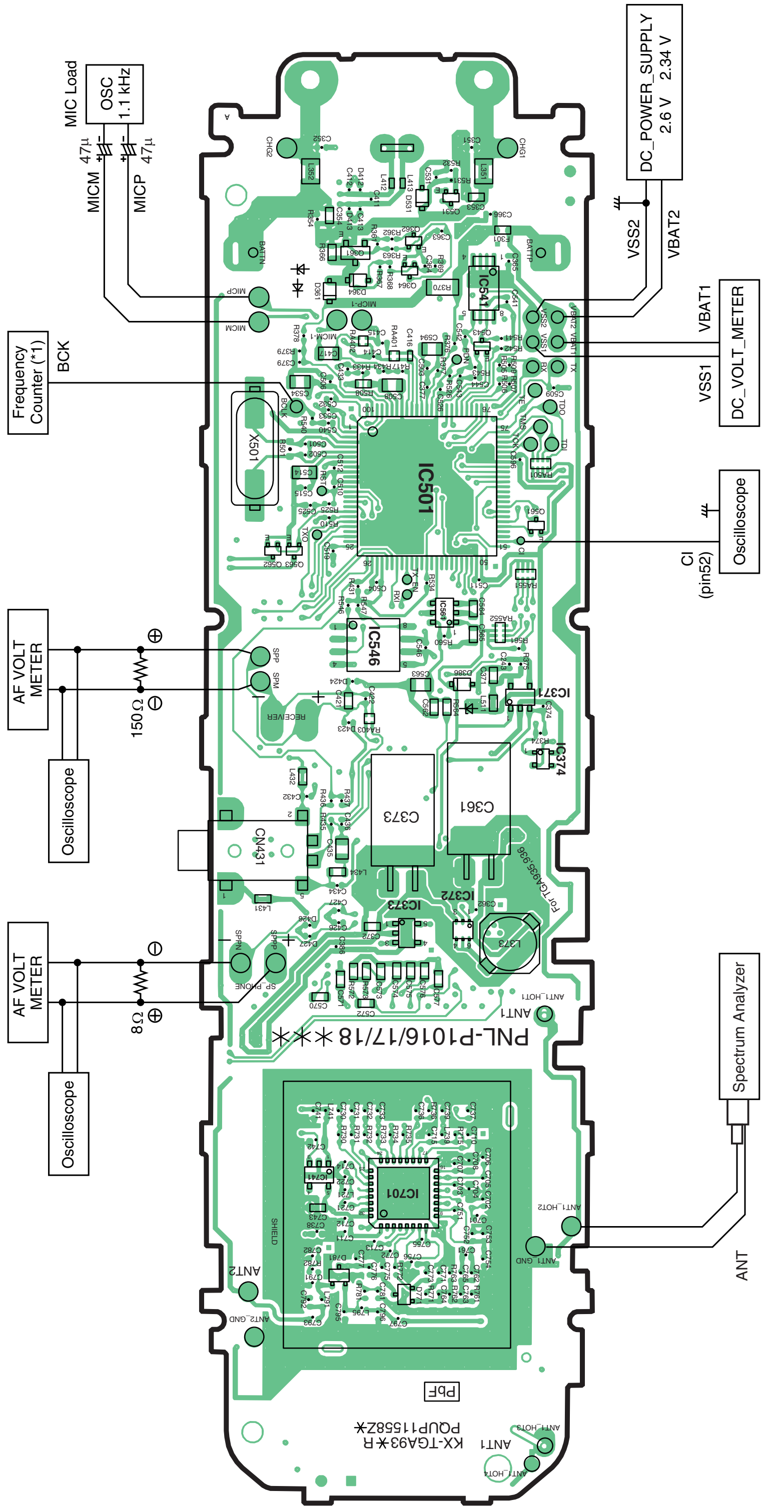


Note:

(*1) is referred to No.3 of **Check Table for RF part** (P.58).

12.3. Handset Reference Drawing

When connecting the simulator equipment for checking, please refer to below.



Note:

(*1) is referred to No.3 of **Check Table for RF part** (P.58).

12.4. Frequency Table

	Ch. (hex)	TX/RX Frequency (MHz)
Channel 0	00	1928.448
Channel 1	01	1926.720
Channel 2	02	1924.992
Channel 3	03	1923.264
Channel 4	04	1921.536

Memo

13 Schematic Diagram

13.1. For Schematic Diagram

13.1.1. Base Unit (Schematic Diagram (Base Unit_Main))

13.1.1.1. Acoustic Testing Mode

Press “STOP”, “ ▶▶ ” and “ ► ” simultaneously, and insert the plug of AC adaptor.

● No beep sound.

It is easier to measure the transmit level with acoustic testing mode.

Notes:

1. DC voltage measurements are taken with voltmeter from the negative voltage line.

> Important Safety Notice:
> Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

2. The schematic diagrams may be modified at any time with the development of new technology.

13.1.2. Handset (Schematic Diagram (Handset_Main))

Notes:

1. DC voltage measurements are taken with an oscilloscope or a tester with a ground.
2. The schematic diagrams may be modified at any time with the development of new technology.

13.1.3. Charger Unit (Schematic Diagram (Charger Unit))

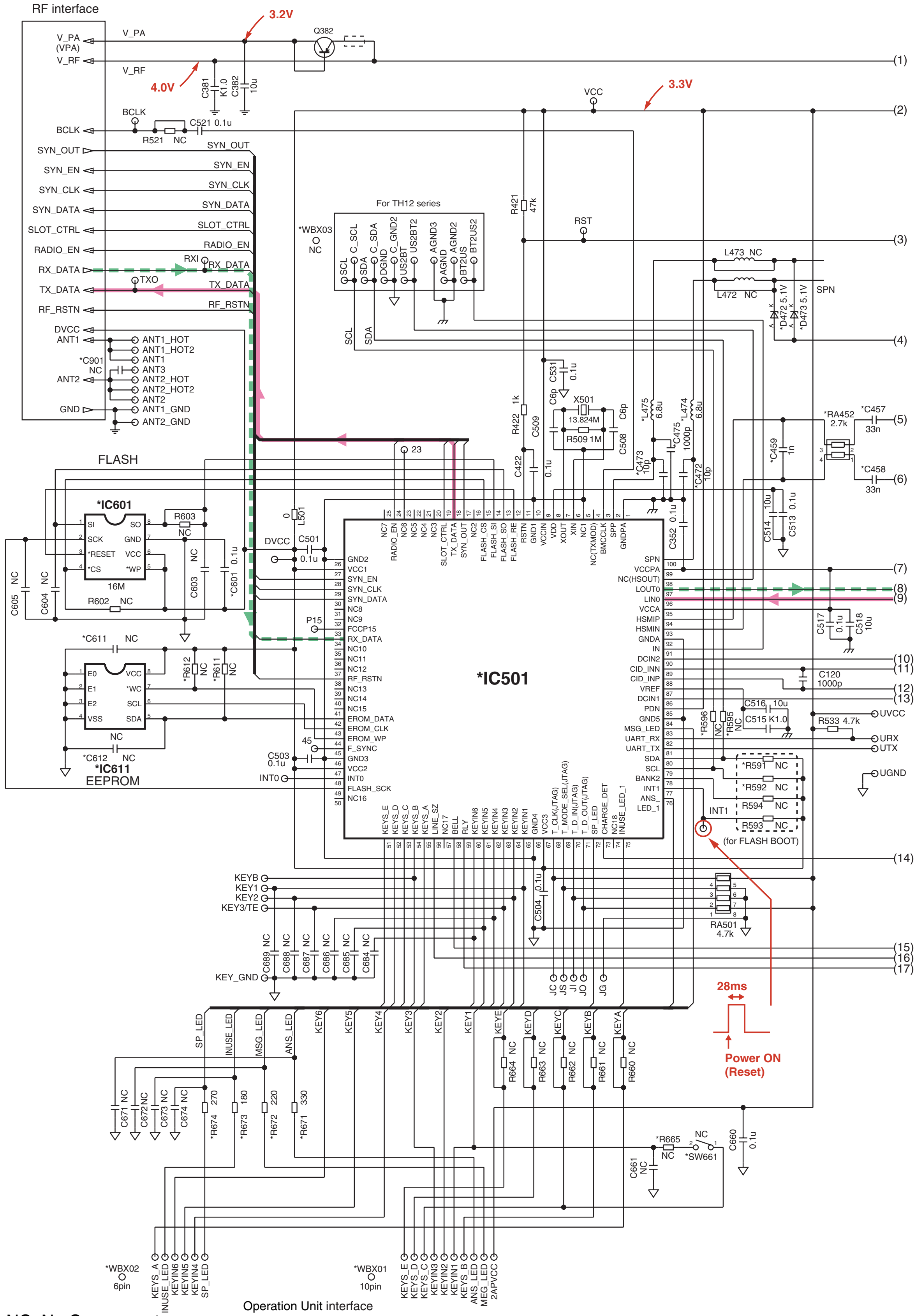
Notes:

1. DC voltage measurements are taken with voltmeter from the negative voltage line.

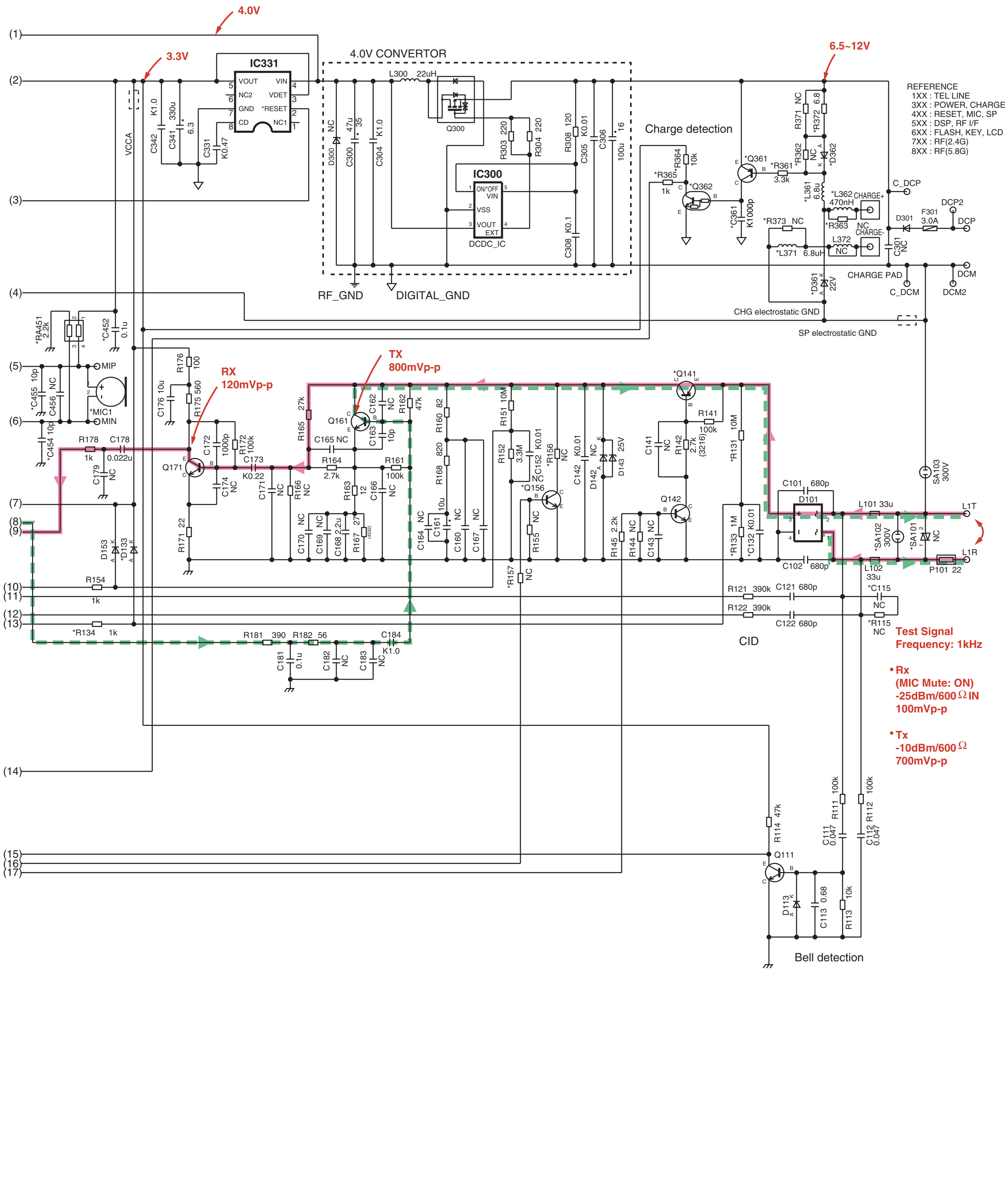
> Important Safety Notice:
> Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

2. The schematic diagrams may be modified at any time with the development of new technology.

13.2. Schematic Diagram (Base Unit_Main)



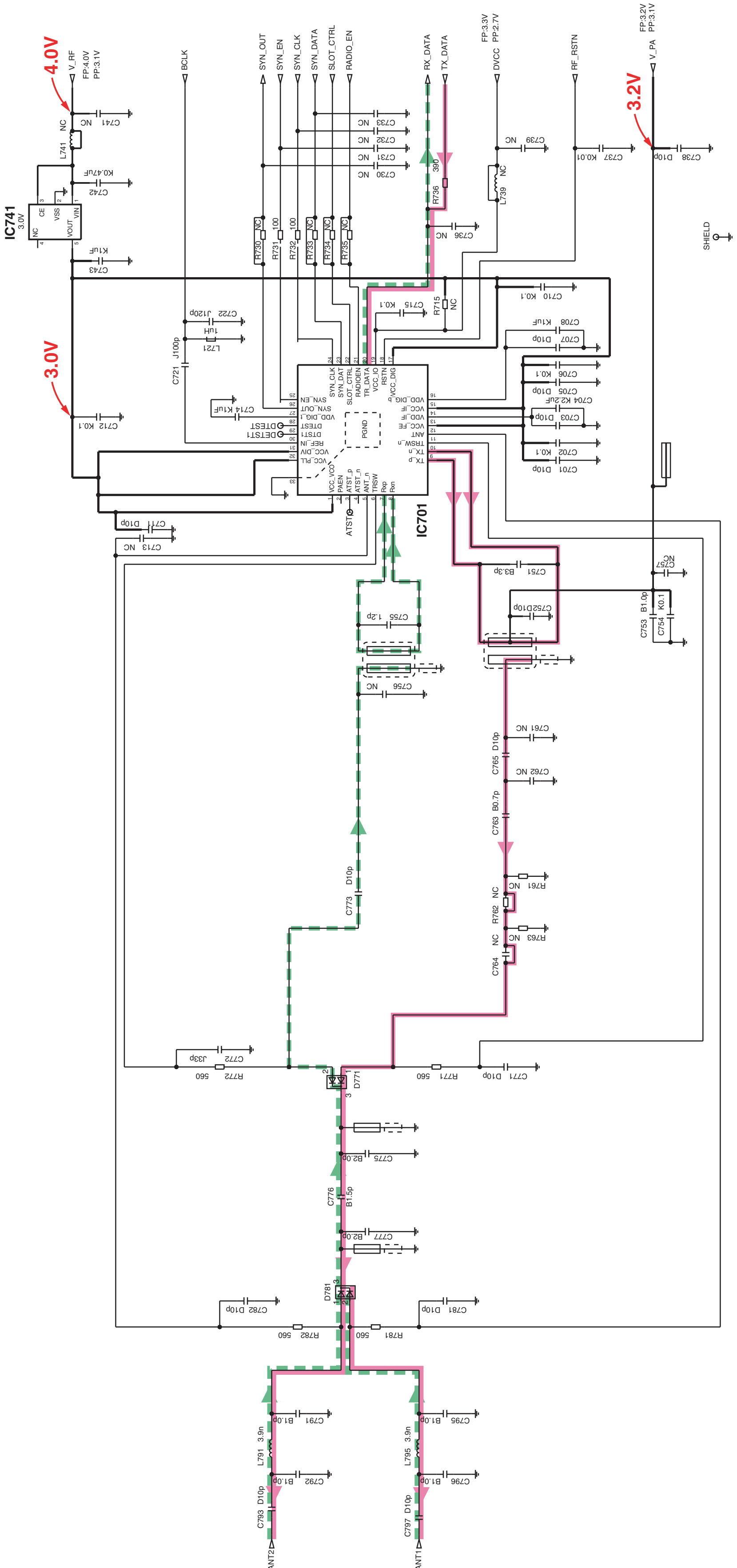
NC: No Components



NC: No Components

KX-TG9341/9342/9343/9344 SCHEMATIC DIAGRAM (Base Unit_Main)

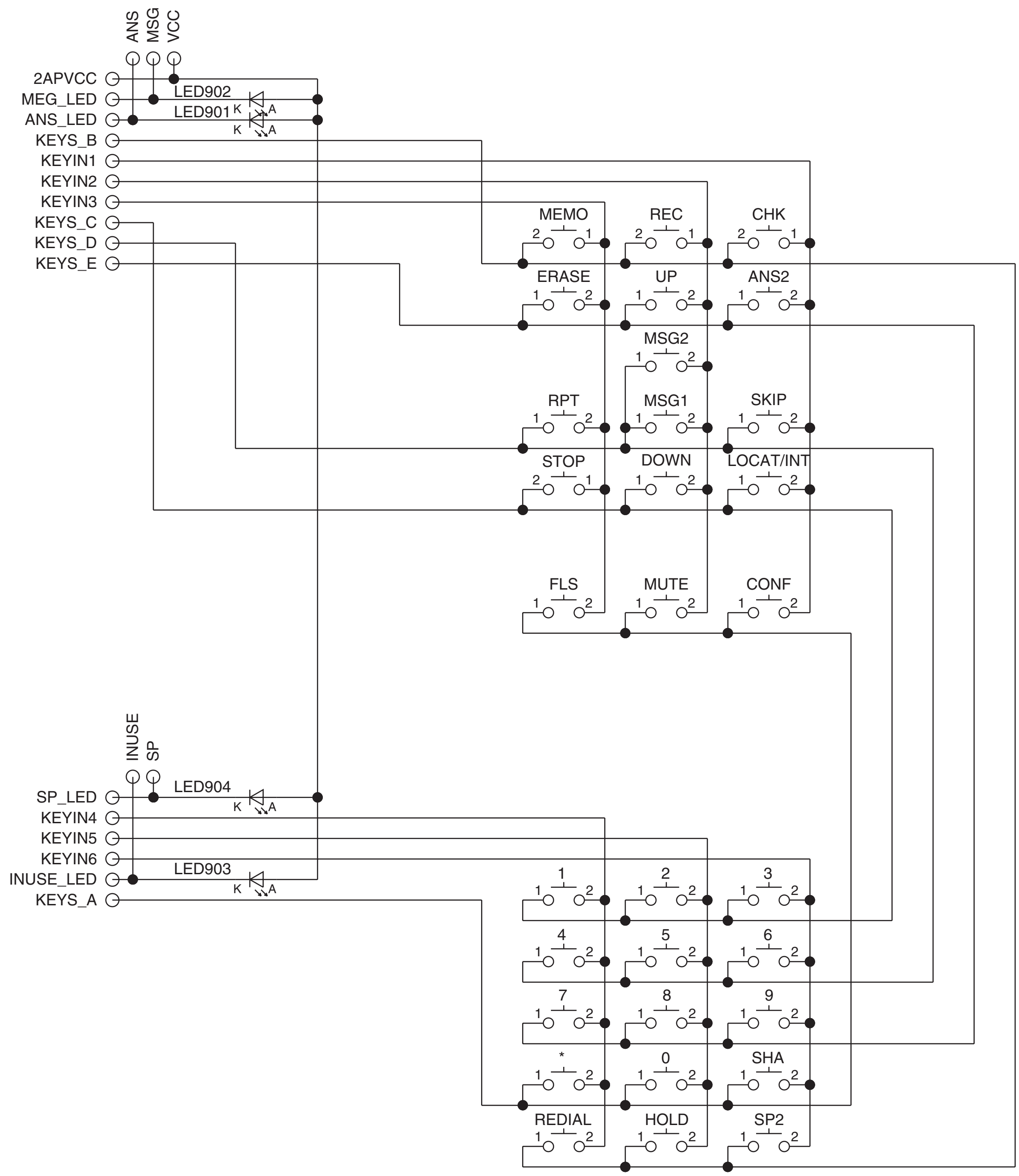
13.3. Schematic Diagram (Base Unit_RF Part)



NC: No Components

KX-TG9341/9342/9343/9344 SCHEMATIC DIAGRAM (Base Unit_RF Part)

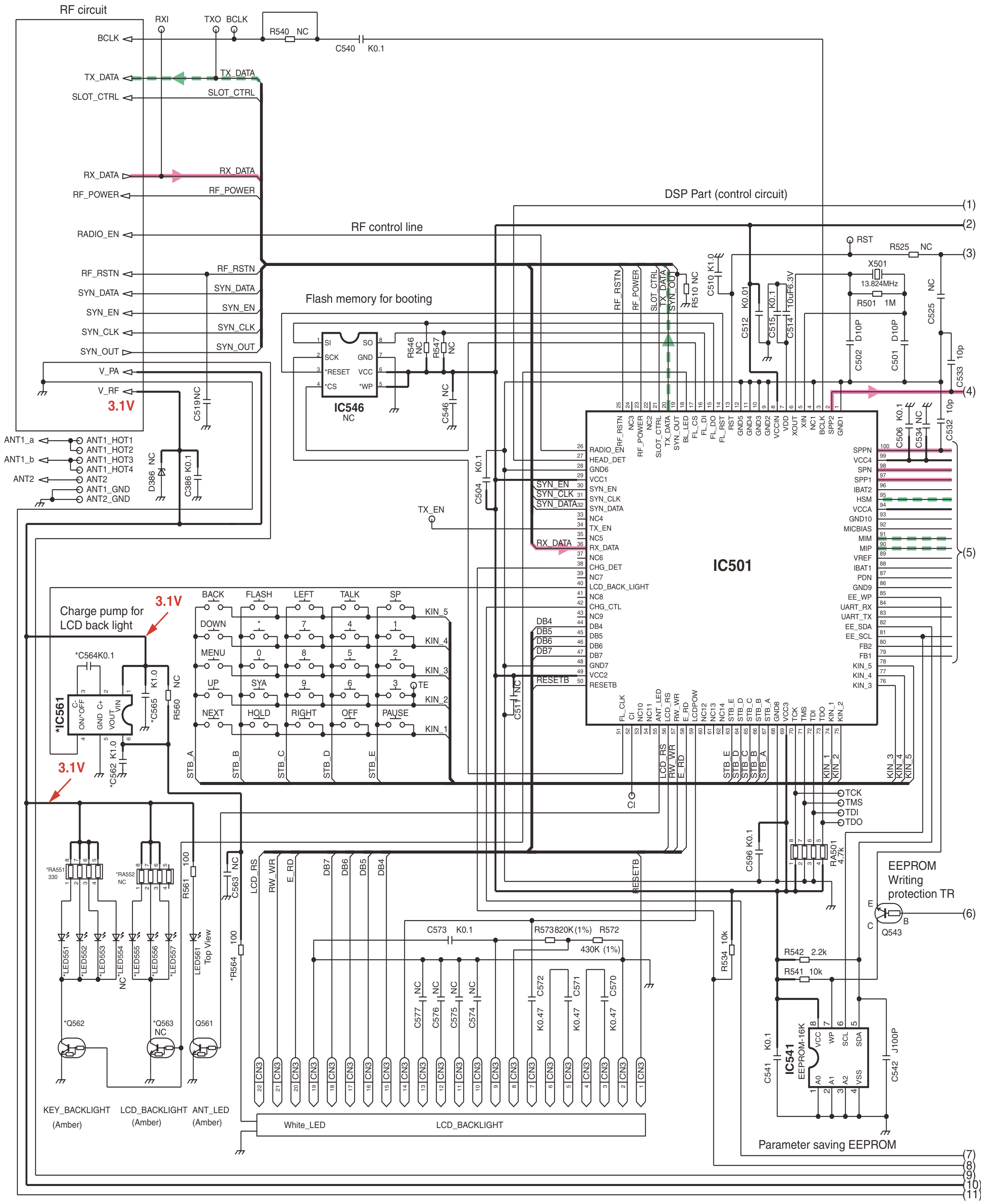
13.4. Schematic Diagram (Base Unit_Operation)



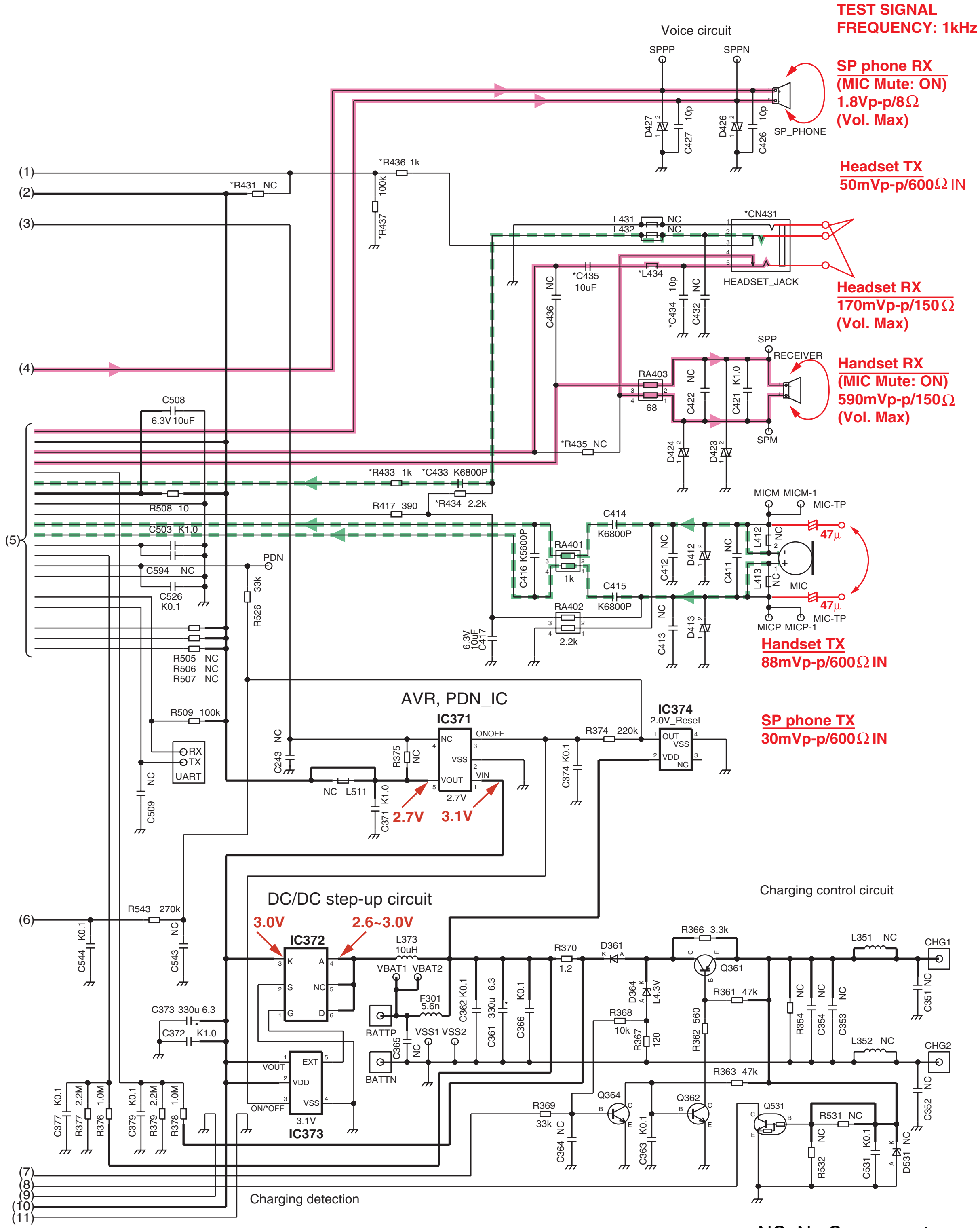
NC: No Components

KX-TG9341/9342/9343/9344 SCHEMATIC DIAGRAM (Base Unit_Operation)

13.5. Schematic Diagram (Handset_Main)



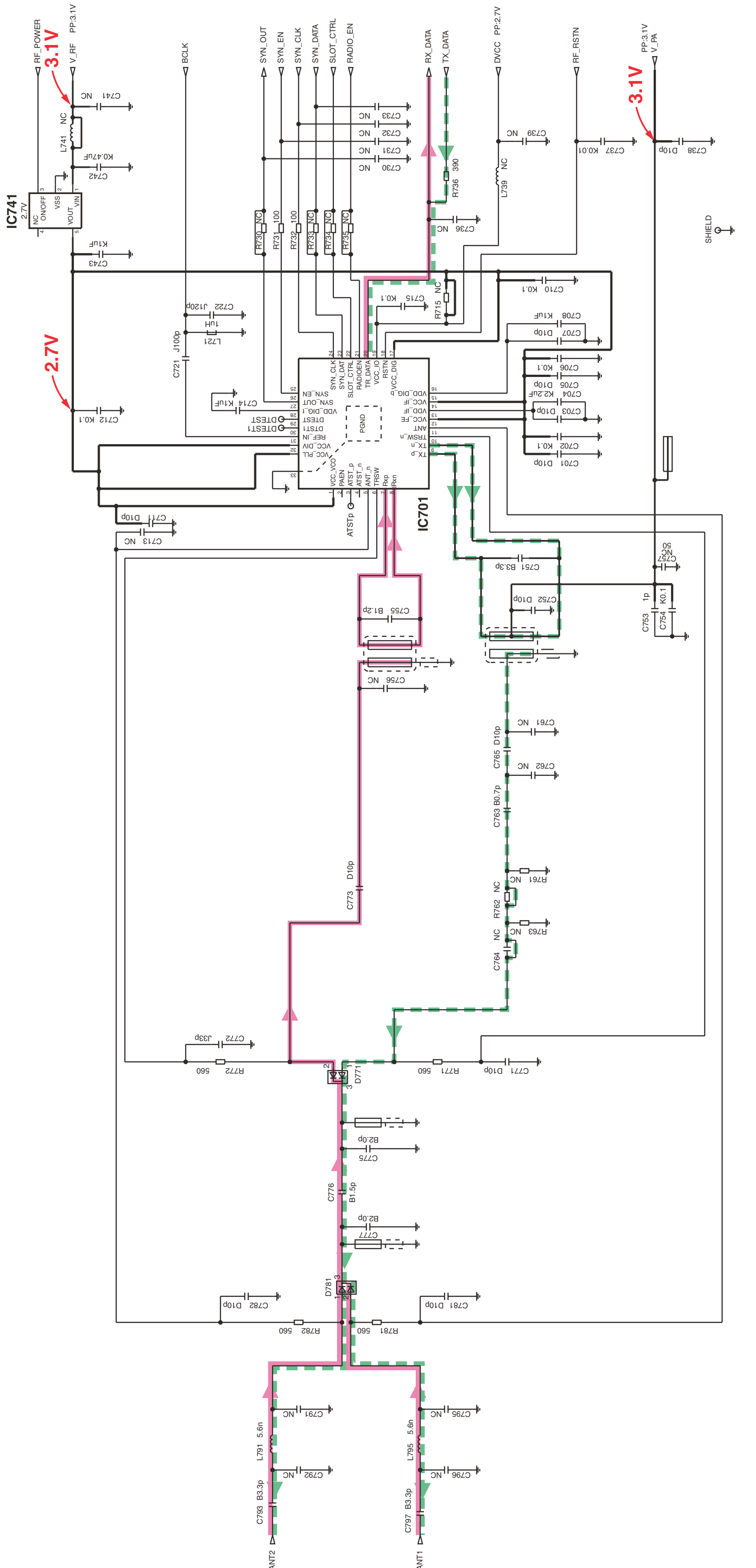
NC: No Components



NC: No Components

KX-TGA931 SCHEMATIC DIAGRAM (Handset_Main)

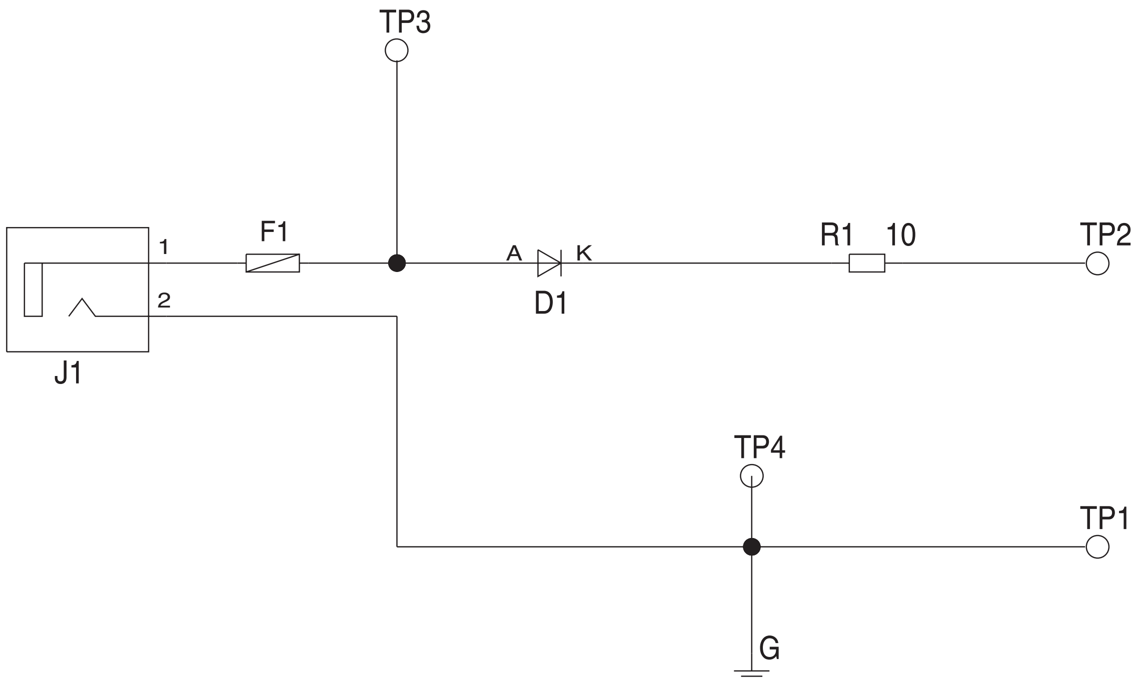
13.6. Schematic Diagram (Handset_RF Part)



NC: No Components

KX-TGA931 SCHEMATIC DIAGRAM (Handset_RF Part)

13.7. Schematic Diagram (Charger Unit)



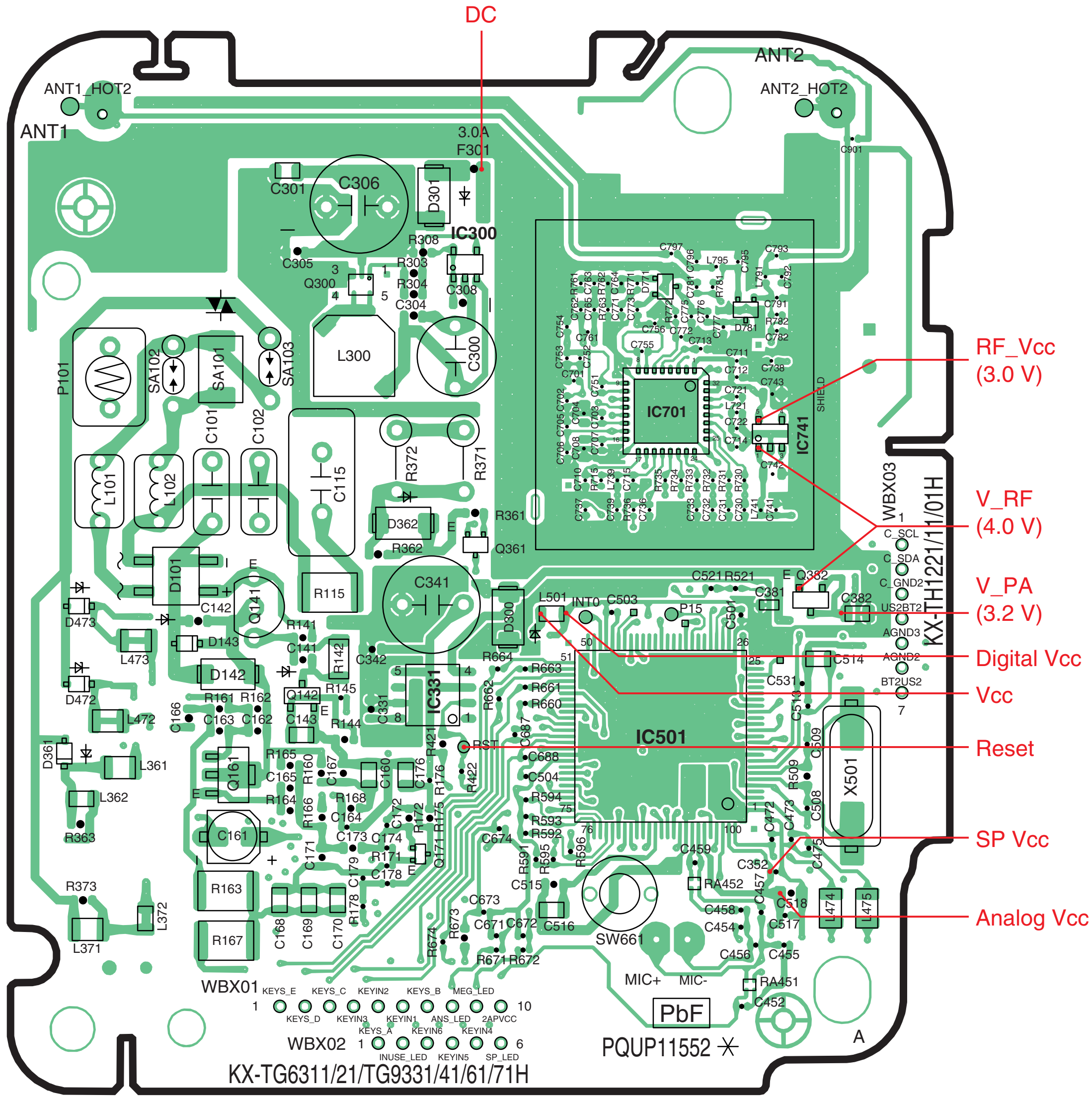
SCHEMATIC DIAGRAM (Charger Unit)

Memo

14 Printed Circuit Board

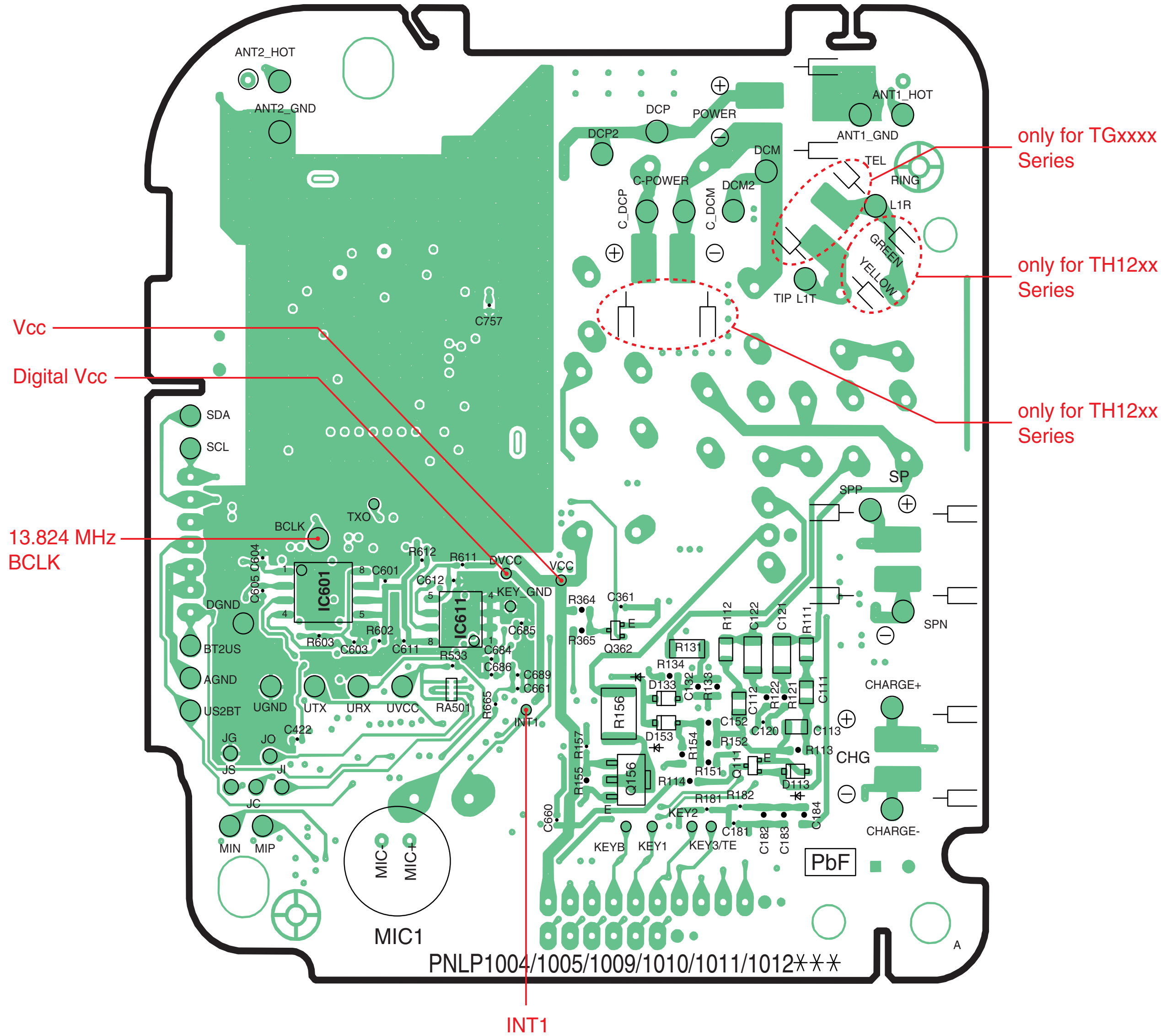
14.1. Circuit Board (Base Unit_Main)

14.1.1. Component View



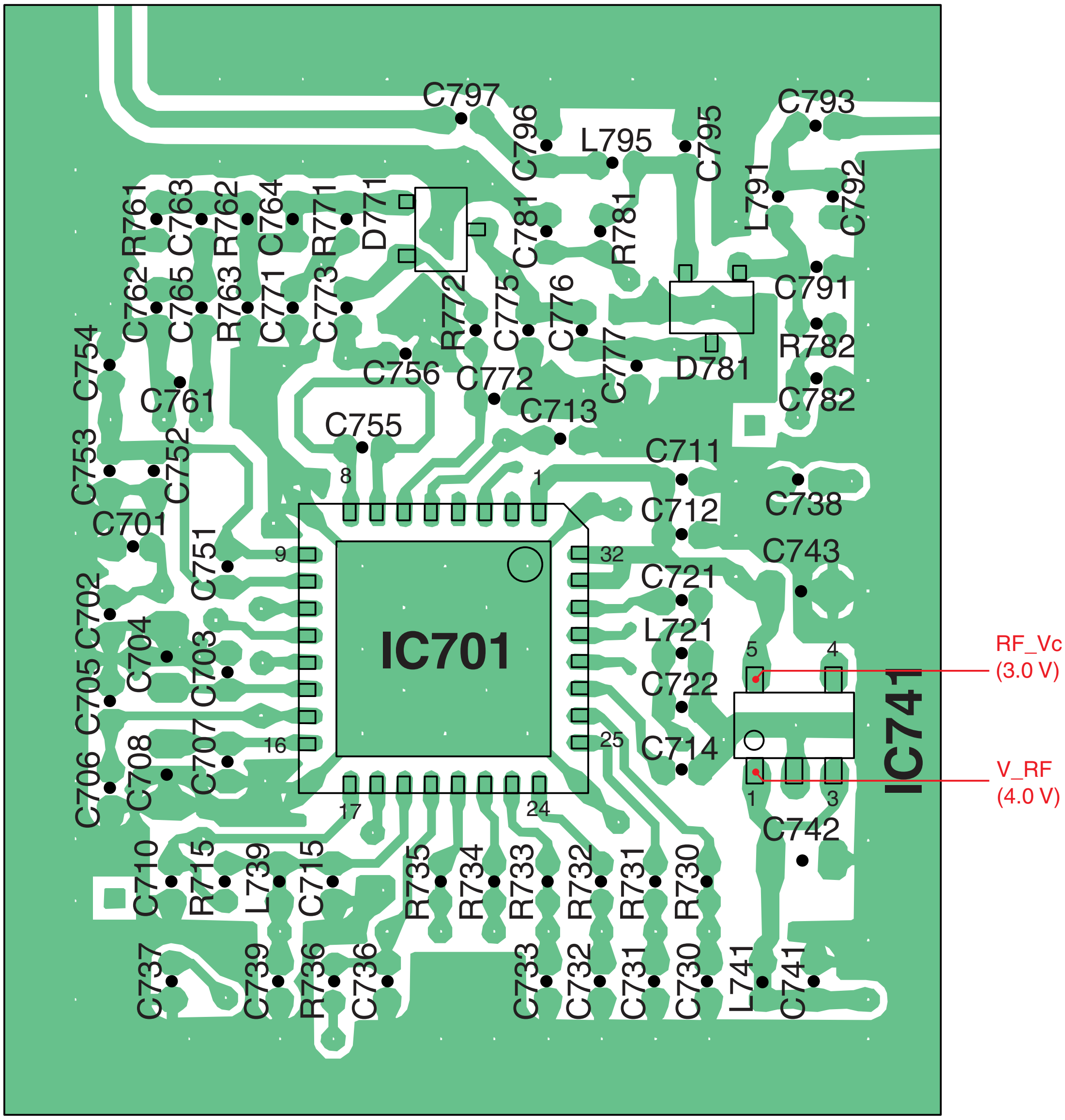
KX-TG9341/9342/9343/9344 CIRCUIT BOARD (Base Unit_Main (Component View))

14.1.2. Bottom View



KX-TG9341/9342/9343/9344 CIRCUIT BOARD (Base Unit_Main (Bottom View))

14.2. Circuit Board (Base Unit_RF Part)

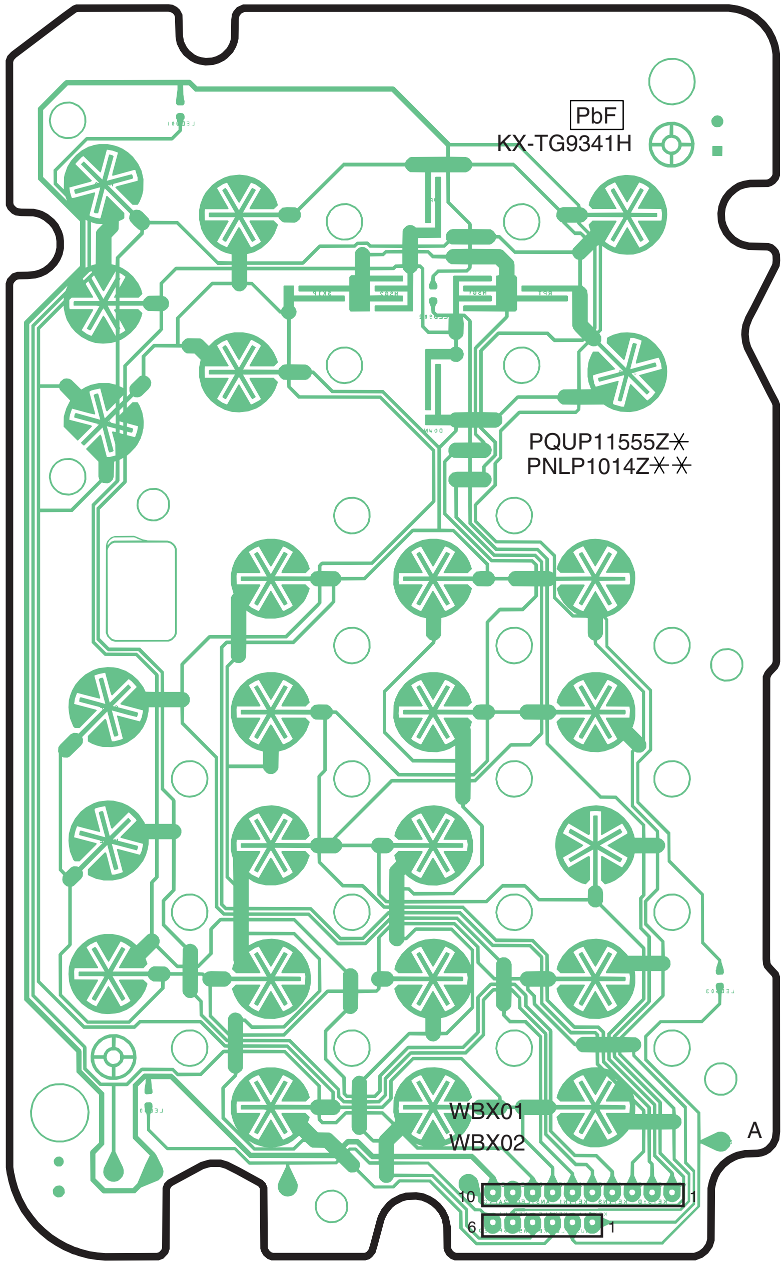


KX-TG9341/9342/9343/9344 CIRCUIT BOARD (Base Unit_RF Part (Component View))

Memo

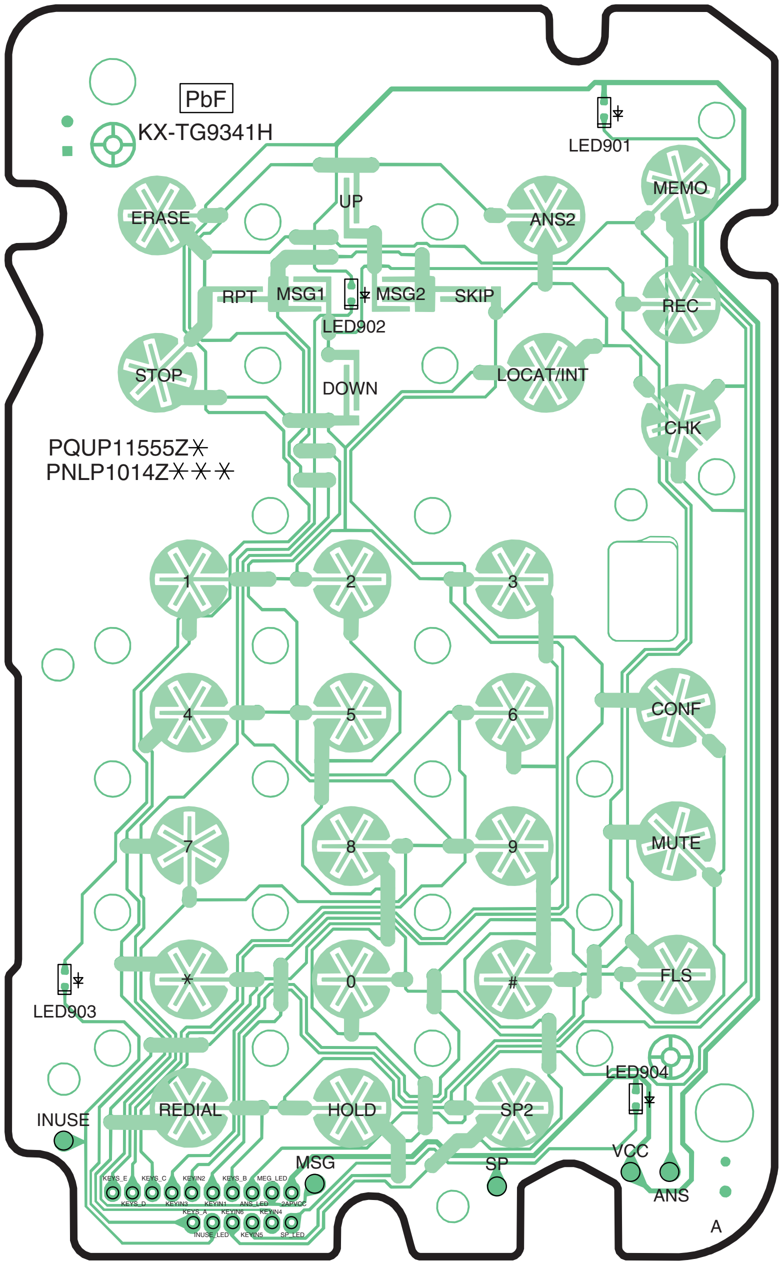
14.3. Circuit Board (Base Unit_Operation)

14.3.1. Component View



KX-TG9341/9342/9343/9344 CIRCUIT BOARD (Base Unit_Operation (Component View))

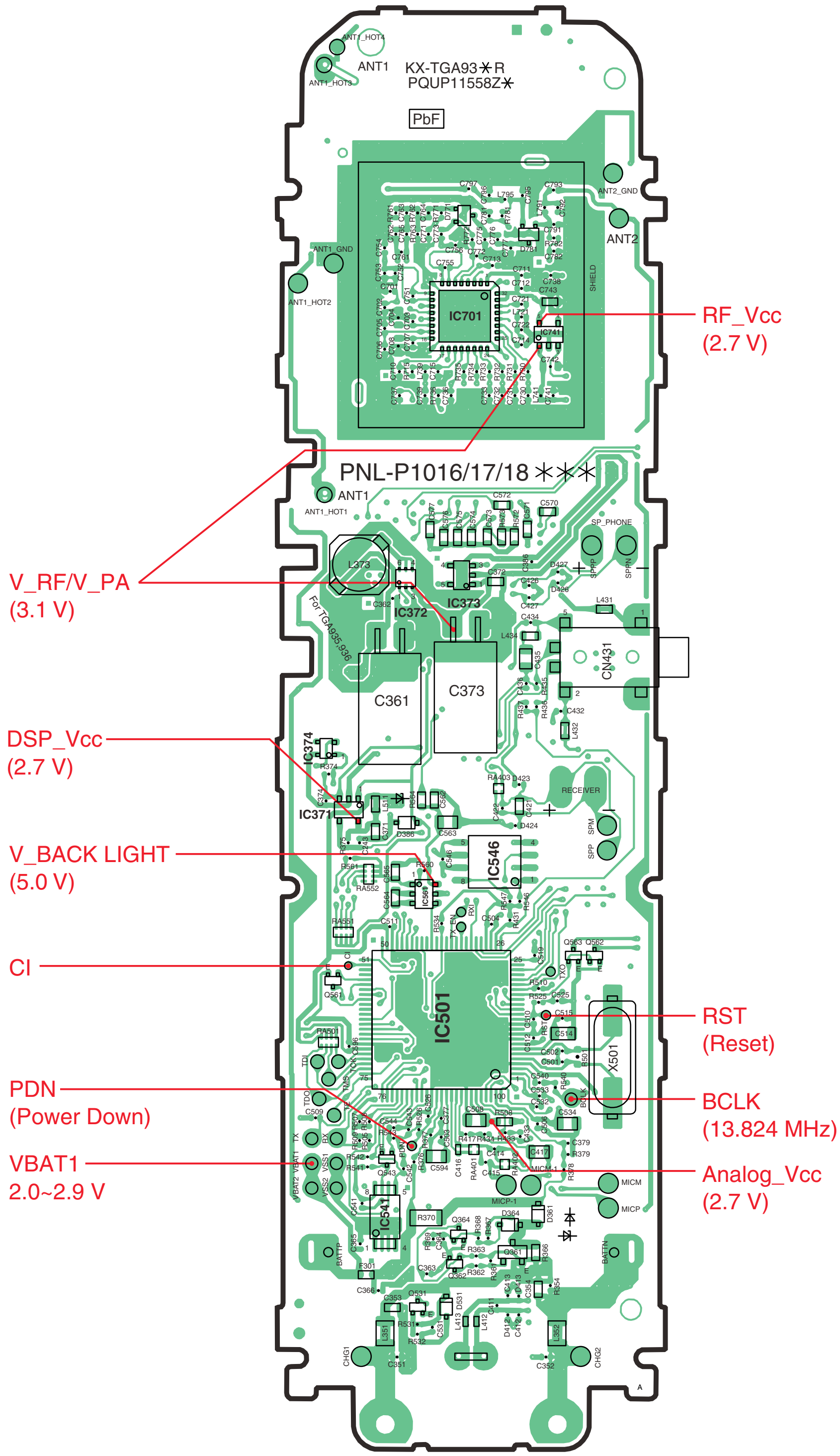
14.3.2. Bottom View



KX-TG9341/9342/9343/9344 CIRCUIT BOARD (Base Unit_Operation (Bottom View))

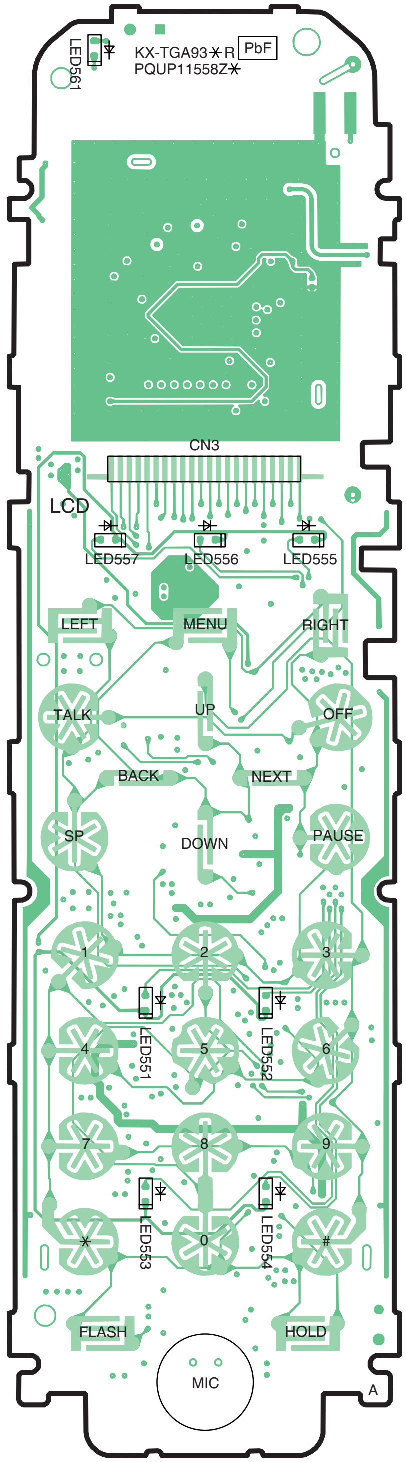
14.4. Circuit Board (Handset_Main)

14.4.1. Component View



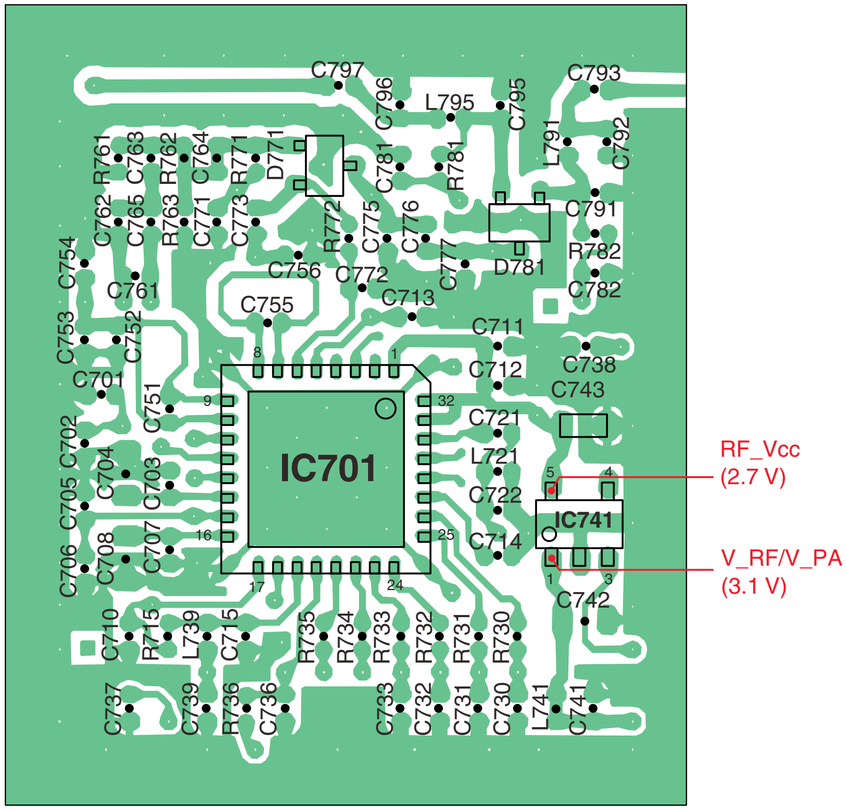
KX-TGA931 CIRCUIT BOARD (Handset_Main (Component View))

14.4.2. Bottom View



KX-TGA931 CIRCUIT BOARD (Handset_Main (Bottom View))

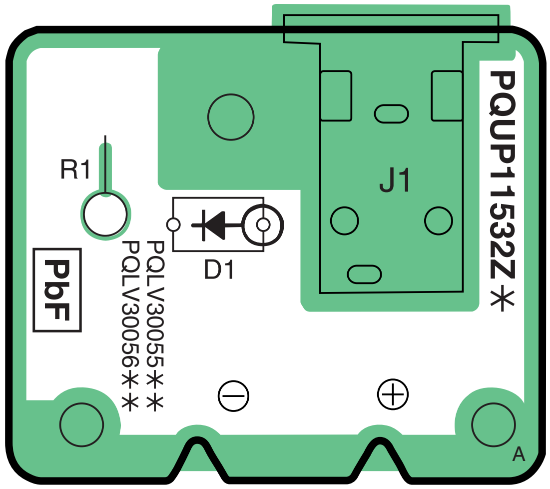
14.5. Circuit Board (Handset_RF Part)



KX-TGA931 CIRCUIT BOARD (Handset_RF Part (Component View))

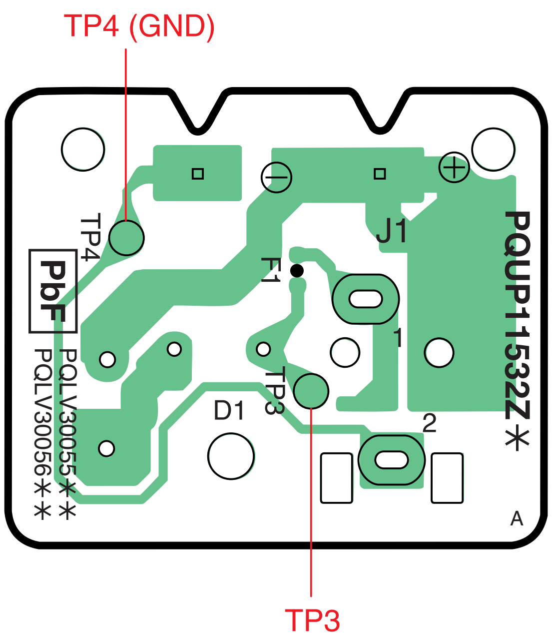
14.6. Circuit Board (Charger Unit)

14.6.1. Component View



CIRCUIT BOARD (Charger Unit (Component View))

14.6.2. Bottom View



CIRCUIT BOARD (Charger Unit (Bottom View))

15 Appendix Information of Schematic Diagram

15.1. CPU Data (Base Unit)

15.1.1. IC501

PIN	Description	I/O	High	High_Z	Low
1	GNDPA	GND	--	--	--
2	SPOUTP	A.O	--	--	--
3	BCLK	A.O	--	--	--
4	TXMOD	A.O	--	--	--
5	NC	A.I	--	--	--
6	XIN	A.I	--	--	--
7	XOUT	A.O	--	--	--
8	VDD	D.O	--	--	--
9	VCCIN	VCC	--	--	--
10	GND	GND	--	--	GND
11	Reset	D.I	Normal	--	Reset
12	FLASH_RST	*	High	Middle	Low
13	FLASH_SO	*	High	Middle	Low
14	FLASH_SI	*	High	Middle	Low
15	FLASH_CS	*	High	Middle	Low
16	NC	D.O	--	--	--
17	SYN_OUT	D.I	High	--	Low
18	TX_DATA	D.O	High	--	Low
19	SLOT_CTRL	D.O	High	--	Low
20	NC	D.O	--	--	--
21	NC	D.O	--	--	--
22	NC	D.O	--	--	--
23	NC	D.O	--	--	--
24	RADIO_EN	D.O	Active	--	Not
25	NC	D.O	--	--	--
26	GND	GND	--	--	GND
27	VCC	VCC	VCC	--	--
28	SYN_LE1	D.O	Not	--	Active
29	SYN_CLK	D.O	High	--	Low
30	SYN_DATA	D.O	High	--	Low
31	RXEN	D.O	Active	--	Off
32	TXEN	D.O	Active	--	Off
33	NC	D.O	--	--	--
34	RXI	D.I	High	--	Low
35	NC	D.O	--	--	--
36	NC	D.O	--	--	--
37	NC	D.O	--	--	--
38	RF_RST	D.O	Normal	--	WakeUp
39	NC	D.O	--	--	--
40	NC	D.O	--	--	--
41	NC	D.O	--	--	--
42	NC	D.O	--	--	--
43	NC	D.O	--	--	--
44	NC	D.O	--	--	--
45	NC	D.O	--	--	--
46	GND	GND	--	--	GND
47	VCC	VCC	VCC	--	--
48	NC(INT0)	D.I.O	--	--	--
49	FLASH_SCK	*	High	Middle	Low
50	NC	D.O	--	--	--
51	KEY_STB_E	D.O	Active	Not	--
52	KEY_STB_D	D.O	Active	Not	--
53	KEY_STB_C	D.O	Active	Not	--
54	KEY_STB_B	D.O	Active	Not	--
55	KEY_STB_A	D.O	--	--	--
56	NC	D.O	--	--	--
57	NC	D.O	--	--	--
58	BELL	D.I	OFF	--	ON
59	RLY	D.O	Off Hook	--	On Hook

PIN	Description	I/O	High	High_Z	Low
60	KEY_IN6	D.I	Non	--	Key In
61	KEY_IN5	D.I	Non	--	Key In
62	KEY_IN4	D.I	Non	--	Key In
63	KEY_IN3	D.I	Non	--	Key In
64	KEY_IN2	D.I	Non	--	Key In
65	KEY_IN1	D.I	Non	--	Key In
66	GND	GND	--	--	GND
67	VCC	VCC	VCC	--	--
68	TCK	D.O	--	--	--
69	TMS	D.I	--	--	--
70	TDI	D.O	--	--	--
71	TD0	D.O	--	--	--
72	SP_LED	D.O	--	Off	On
73	CHG_DET	D.O	Off Charge	--	On Charge
74	NC	D.O	--	--	--
75	INUSE_LED	D.O	--	Off	On
76	ANS_LED	D.I.O	--	Off	On
77	NC(INT1)	D.O	--	--	--
78	NC	D.O	--	--	--
79	NC	D.O	--	--	--
80	NC	D.O	--	--	--
81	UART_TX	D.O	High	--	Low
82	UART_RX	D.I	High	--	Low
83	MSG_LED	D.I.O	--	Off	On
84	GND	GND	--	--	GND
85	PDN	A.I	--	--	--
86	DCIN1	A.I	--	--	--
87	VREF	A.O	--	--	--
88	MIP	A.I	--	--	--
89	MIN	A.I	--	--	--
90	DCIN2	A.I	--	--	--
91	NC	A.I	--	--	--
92	GNDA	GND	--	--	--
93	HSMIP	A.I	--	--	--
94	HSMIN	A.I	--	--	--
95	VCCA	VCC	--	--	--
96	Headset_MIC_in	A.I	--	--	--
97	LOUT0	A.O	--	--	--
98	NC	A.O	--	--	--
99	VCCPA	VCC	--	--	--
100	SPOUTN	A.O	--	--	--

Note:
- The mark “*” in the I/O column means the port is controlled by the firmware.

15.2. CPU Data (Handset)

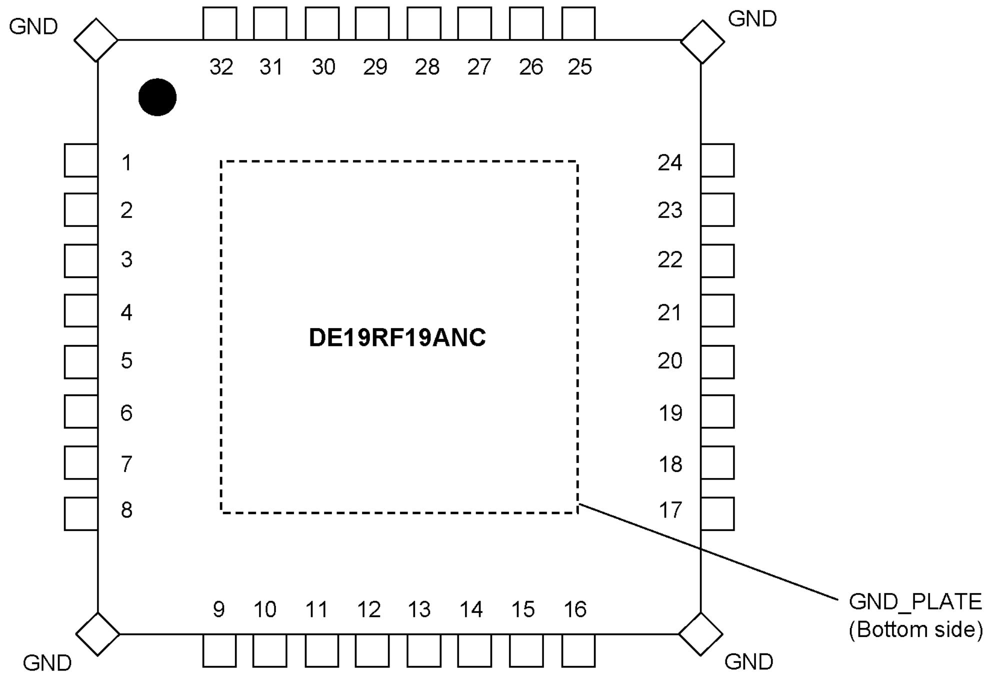
15.2.1. IC501

PIN	Description	I/O	High	High_Z	Low
1	GNDPA	GND	--	--	GND
2	SPOUTP	A.O	--	--	--
3	BCLK	A.O	--	--	--
4	NC	A.I	--	--	Normal
5	XIN	A.I	--	--	--
6	XOUT	A.O	--	--	--
7	VDD	VDD	--	--	--
8	VCCIN	VCC	VCC	--	--
9	GND	GND	--	--	GND
10	GND	GND	--	--	GND
11	GND	A.I	--	--	--
12	GND	A.O	--	--	--
13	RESET	D.I	Normal	--	Reset
14	(FLASH_RESET)	D.O	--	--	Normal
15	(FLASH_SO)	D.O	--	--	Normal
16	(FLASH_SI)	D.O	High	--	Low
17	(FLASH_CS)	D.O	--	--	Normal
18	KEY_BL LED	D.O	On	--	Off
19	SYN_OUT	D.I	High	--	Low
20	TX OUT	D.O	High	--	Low
21	SLOT_CTRL	D.O	High	--	Low
22	NC	D.O	--	--	--
23	RF_POWER	D.O	High	--	Low
24	NC	D.0	--	--	--
25	RF_RESET	D.O	On	--	Off
26	RADIO_EN	D.O	On	--	Off
27	HEADSET_DET	D.I	Non	--	Headset In
28	GND	GND	--	--	GND
29	VCC	VCC	VCC	--	--
30	SERIAL_LE	D.O	High	--	Low
31	SERIAL_CLK	D.O	High	--	Low
32	SERIAL DATA	D.O	High	--	Low
33	RXEN	D.O	Active	--	Off
34	TXEN	D.O	Active	--	Off
35	NC	D.O	--	--	Normal
36	TR_DATA	D.I	--	--	--
37	NC	D.I	--	--	--
38	CHARGE_DET	D.I	Off Charge	--	On Charge
39	NC	D.I	--	--	--
40	LCD_BL	D.O	BL_ON	--	BL_OFF
41	NC	D.O	--	--	Normal
42	CHARGE_CNT	D.O	Trickle	Normal	--
43	NC	D.O	--	--	Normal
44	DOT_LCD_D4	D.O	High	--	Low
45	DOT_LCD_D5	D.O	High	--	Low
46	DOT_LCD_D6	D.O	High	--	Low
47	DOT_LCD_D7	D.O	High	--	Low
48	GND	GND	--	--	GND
49	VCC	VCC	VCC	--	--
50	DOT_LCD_RESET	D.O	Normal	--	Reset
51	(FLASH_SCK)	D.O	High	--	Low
52	CI	D.O	--	--	Normal
53	NC	D.O	--	--	--
54	NC	D.O	--	--	--
55	ANT_LED1	D.O	On	--	Off
56	DOT_LCD_RS	D.O	Data	--	Instruct
57	DOT_LCD_RW_WR	D.O	Read	--	Write
58	DOT_LCD_E_RD	D.O	Active	--	Not
59	DOT_LCD_POWER_SW	D.O	On	--	Off
60	NC	D.O	--	--	Normal

PIN	Description	I/O	High	High_Z	Low
61	NC	D.O	--	--	Normal
62	NC	D.O	--	--	Normal
63	KEYSTROBE_E	D.O	--	Not	Active
64	KEYSTROBE_D	D.O	--	Not	Active
65	KEYSTROBE_C	D.O	--	Not	Active
66	KEYSTROBE_B	D.O	--	Not	Active
67	KEYSTROBE_A	D.O	--	Not	Active
68	GND	GND	--	--	GND
69	VCC	VCC	VCC	--	--
70	TEST_CLK	D.I	--	--	--
71	TEST_MODE_SELECT	D.I	--	--	--
72	TEST_DATA_IN	D.I	--	--	--
73	TEST_DATA_OUT	D.O	--	--	--
74	KEYIN1	D.I	Non	--	Key In
75	KEYIN2	D.I	Non	--	Key In
76	KEYIN3	D.I	Non	--	Key In
77	KEYIN4	D.I	Non	--	Key In
78	KEYIN5	D.I	Non	--	Key In
79	(INT1)	D.O	--	--	Normal
80	(INT0)	D.O	--	--	Normal
81	EEPROM_CLK	D.O	High	--	Low
82	EEPROM_DATA	D.I.O	--	High	Low
83	UART_TX	D.O	High	--	Low
84	UART_RX	D.I	High	--	Low
85	EEPROM_WP	D.O	WP	--	Write
86	GND	GND	--	--	GND
87	PDN	A.I	--	--	--
88	Battlow	A.I	--	--	--
89	VREF	A.O	--	--	--
90	MIP	A.I	--	--	--
91	MIN	A.I	--	--	--
92	DCIN2	A.I	--	--	--
93	GNDA	GND	--	--	GND
94	VCCA	VCC	VCC	--	--
95	Headset_MIC_in	A.I	--	--	--
96	DCIN0	A.I	--	--	--
97	LOUT0	A.O	--	--	--
98	HSSPOUT	A.O	--	--	--
99	VCCPA	VCC	VCC	--	--
100	SPOUTN	A.O	--	--	--

15.3. Explanation of IC Terminals (RF Part)

15.3.1. IC701

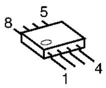


Pin	Description	I/O
1	VCC_VCO	VCC
2	PAEN	O
3	ATST_p	O
4	ATST_n	O
5	ANT_n	O
6	TRSW	O
7	RXp	I
8	RXn	I
9	TX_p	O
10	TX_n	O
11	TRSW_n	O
12	ANT	O
13	VCC_FE	VCC
14	VDD_IF	VCC
15	VCC_IF	VCC
16	VDD_DIG_b	VCC
17	VCC_DIG	VCC

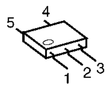
Pin	Description	I/O
18	RSTN	I
19	VCC_IO	VCC
20	TR_DATA	I/O
21	RADIOEN	I
22	SLOT_CTRL	I
23	SYN_DAT	I
24	SYN_CLK	I
25	SYN_EN	I
26	SYN_OUT	O
27	VDD_DIG_t	VCC
28	DTEST	O
29	DTST1	O
30	REF_IN	I
31	VCC_DIV	VCC
32	VCC_PLL	VCC
GND_PLATE		GND

15.4. Terminal Guide of the ICs, Transistors and Diodes

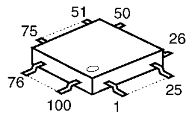
15.4.1. Base Unit



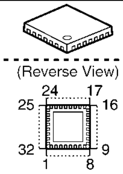
PNWITG9341TH
C0DBFGD00017



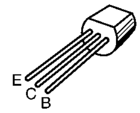
C0DBAGZ00023
C0CBABE00029



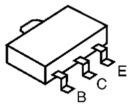
C2HBBY000094



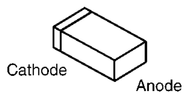
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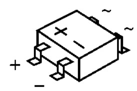
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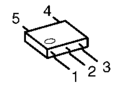
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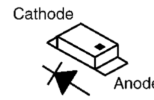
MA111, MA8220
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MANV250GEL
B0ECKM000008



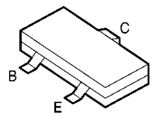
MAZ805100L
PQVDMD5S



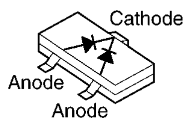
B1ZBZ0000065



PQVDBR1111C
LNJ308G8JRA

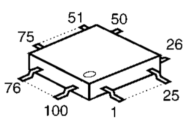


PQVTBF822T7, B1ADGE000004
2SC6054JSL, 2SB1218A
UNR92A2J0L

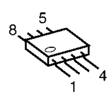


B0DDCL000001

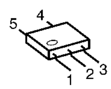
15.4.2. Handset



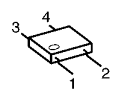
C2HBBY000097



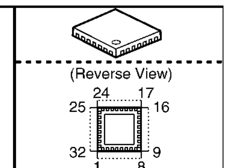
PNWITGA931TR



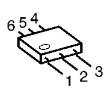
C0DBGYY00297
C0CBCAC00252
C0DBAYY00067



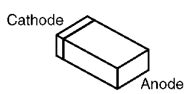
C0EBD0000355



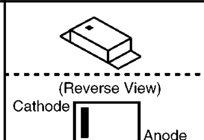
C1CB00002852



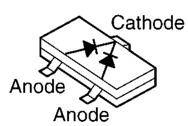
C0DBZHA00012
MTM767200LBF



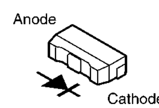
MA8043L
MA2ZD0200L



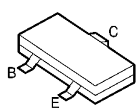
B3ACB0000190



B0DDCL000001

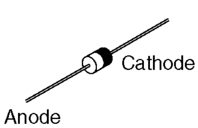


B3AFB0000211



B1ADGE000004, 2SC6054JSL
UNR921MJ0L, UNR921EJ0L
UNR9215J0L

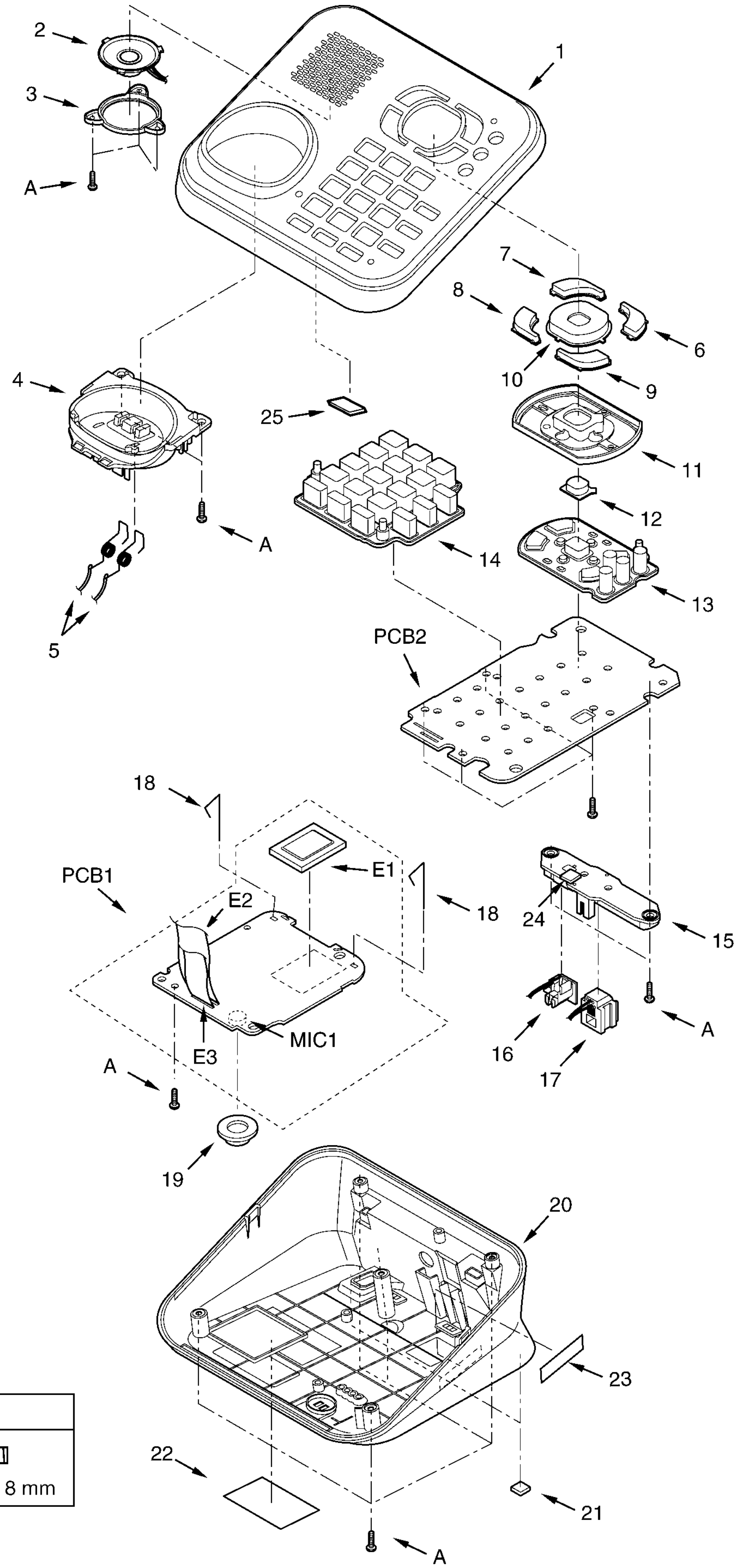
15.4.3. Charger Unit



B0JAME000095

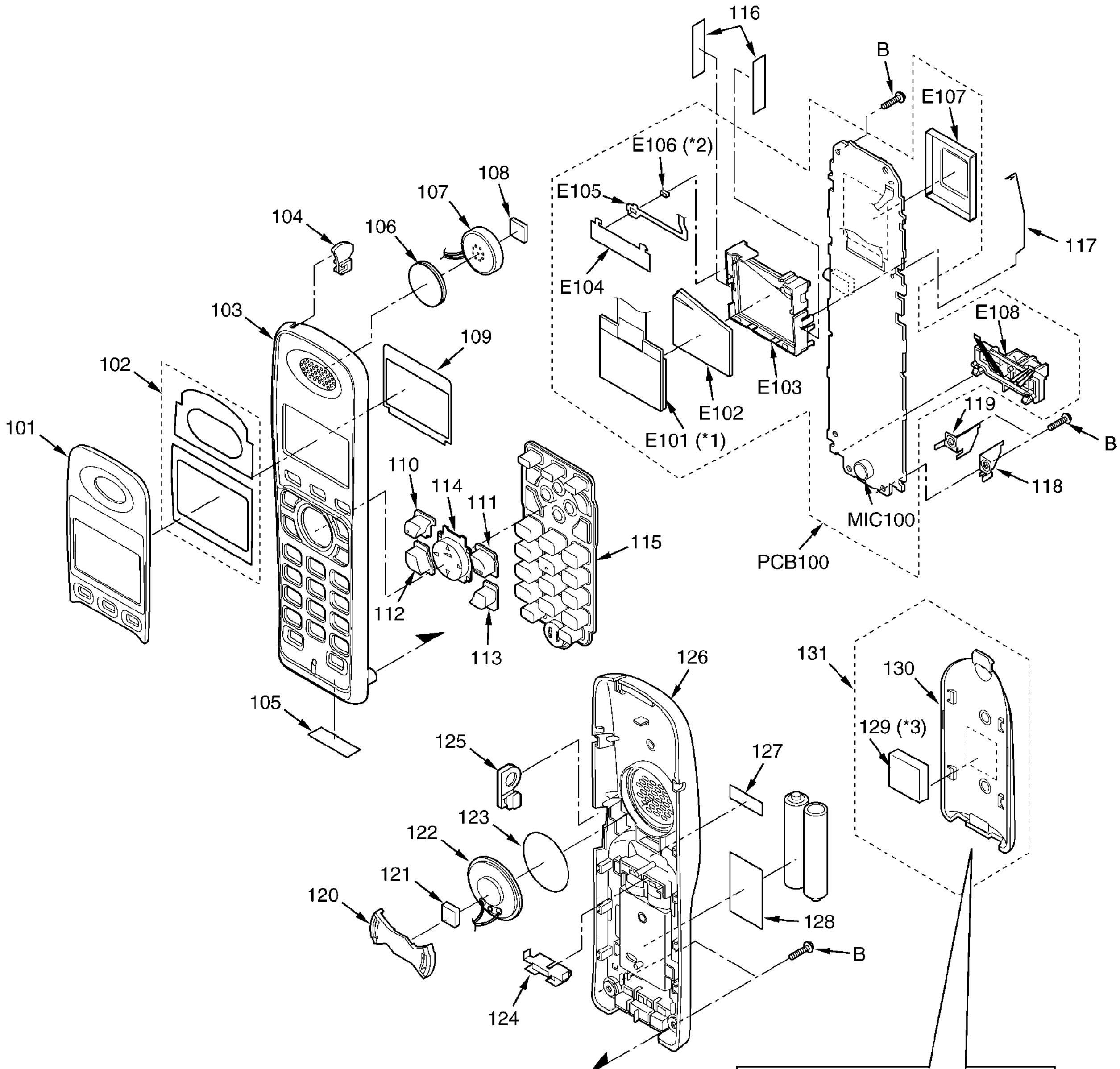
16 Exploded View and Replacement Parts List

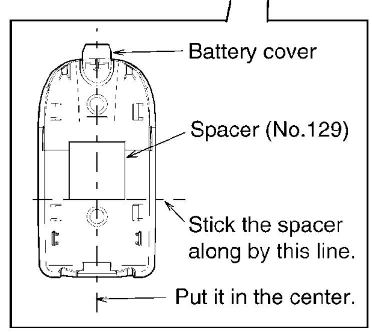
16.1. Cabinet and Electrical Parts (Base Unit)

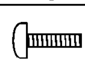


Ref.No.	Figure
A	ϕ2.6 × 8 mm

16.2. Cabinet and Electrical Parts (Handset)





Ref.No.	Figure
B	 $\phi 2 \times 8$ mm

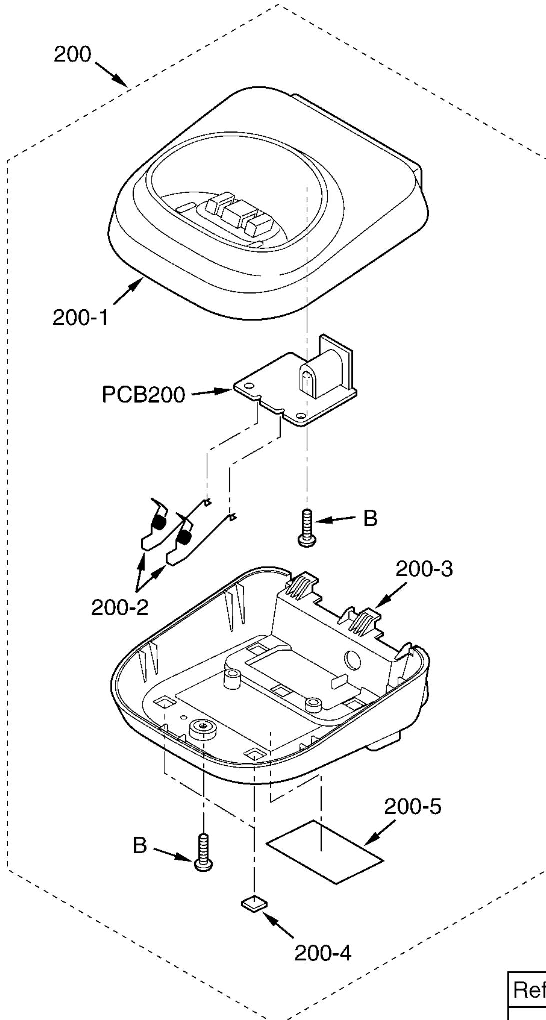
Note:

(*1) This cable is fixed by welding. Refer to **How to Replace the Handset LCD** (P.72).

(*2) Refer to **Handset** (P.102) of **Terminal Guide of the ICs, Transistors and Diodes**.

(*3) Attach the SPACER (No. 129) to the exact location described above.

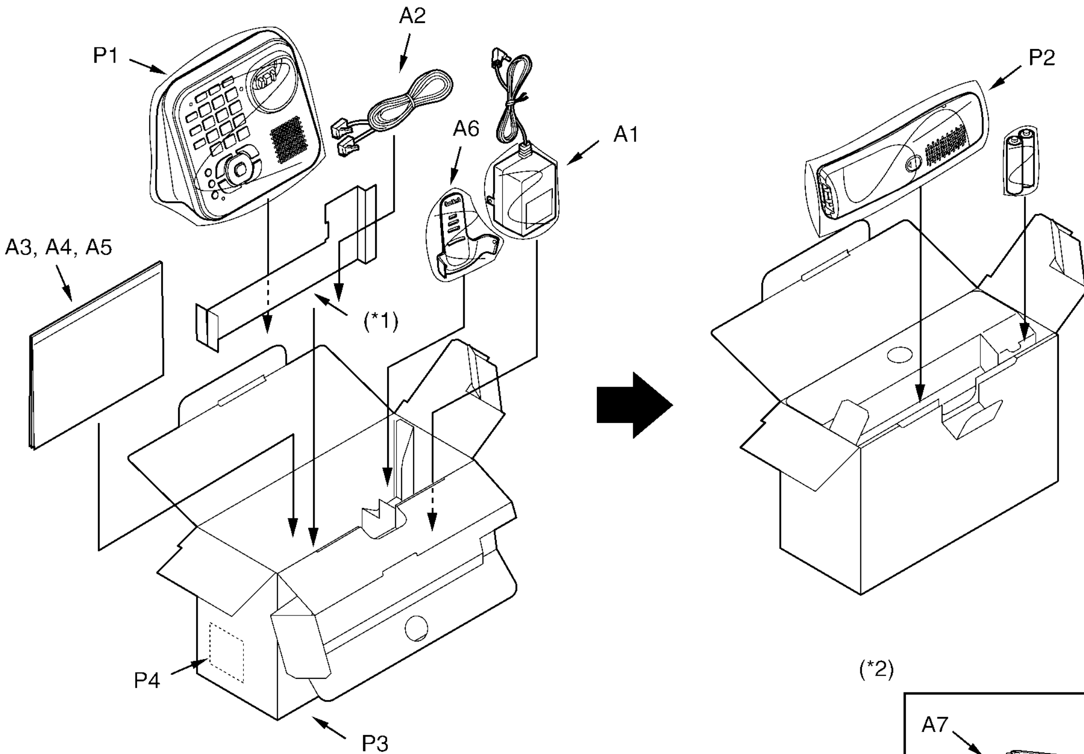
16.3. Cabinet and Electrical Parts (Charger Unit)



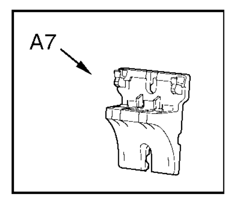
Ref.No.	Figure
B	φ2 × 8 mm

16.4. Accessories and Packing Materials

16.4.1. KX-TG9341T



(*2)



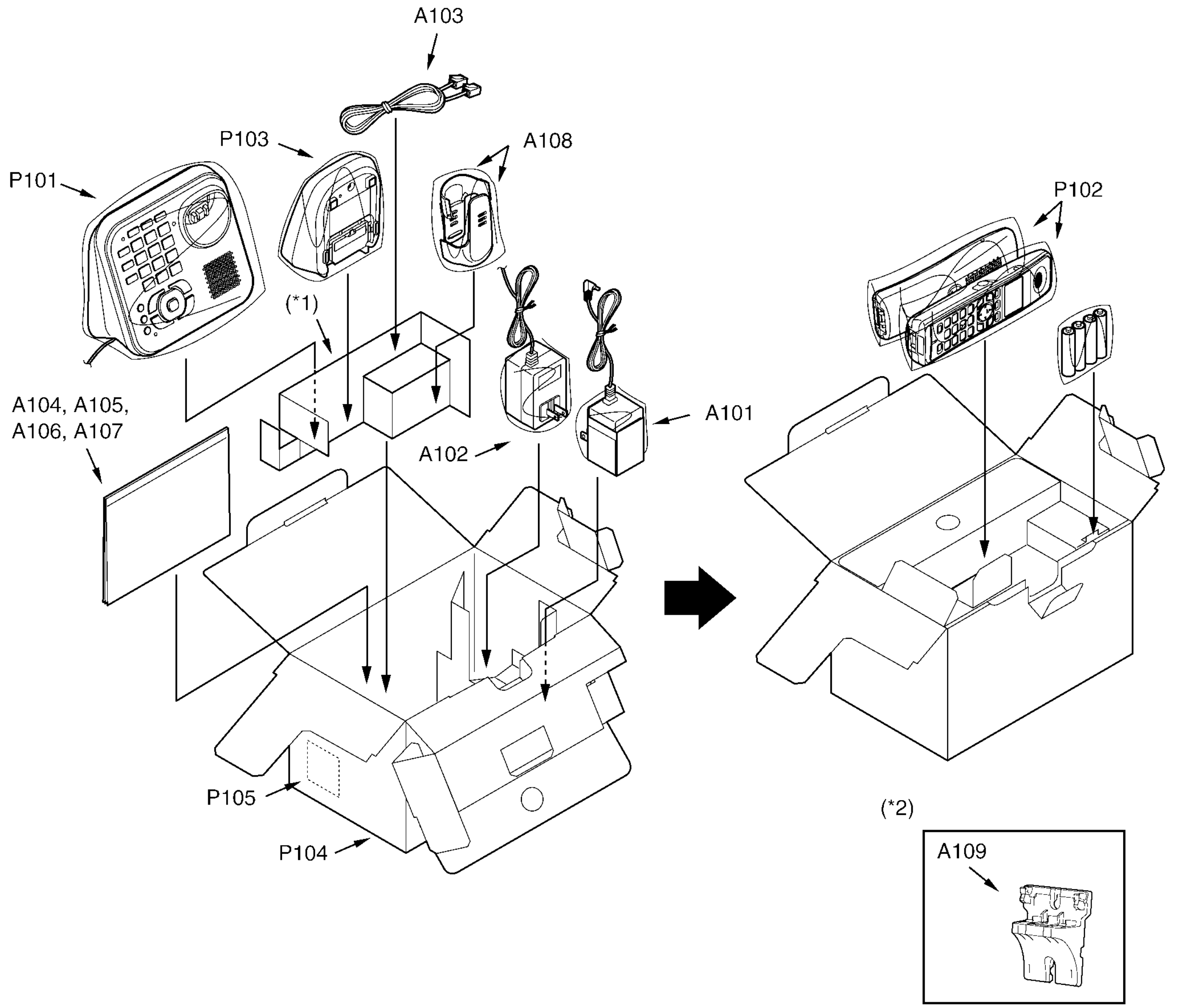
Note:

(*1) This pad is piece of Ref No. P3 (GIFT BOX).

(*2) Optional Accessories

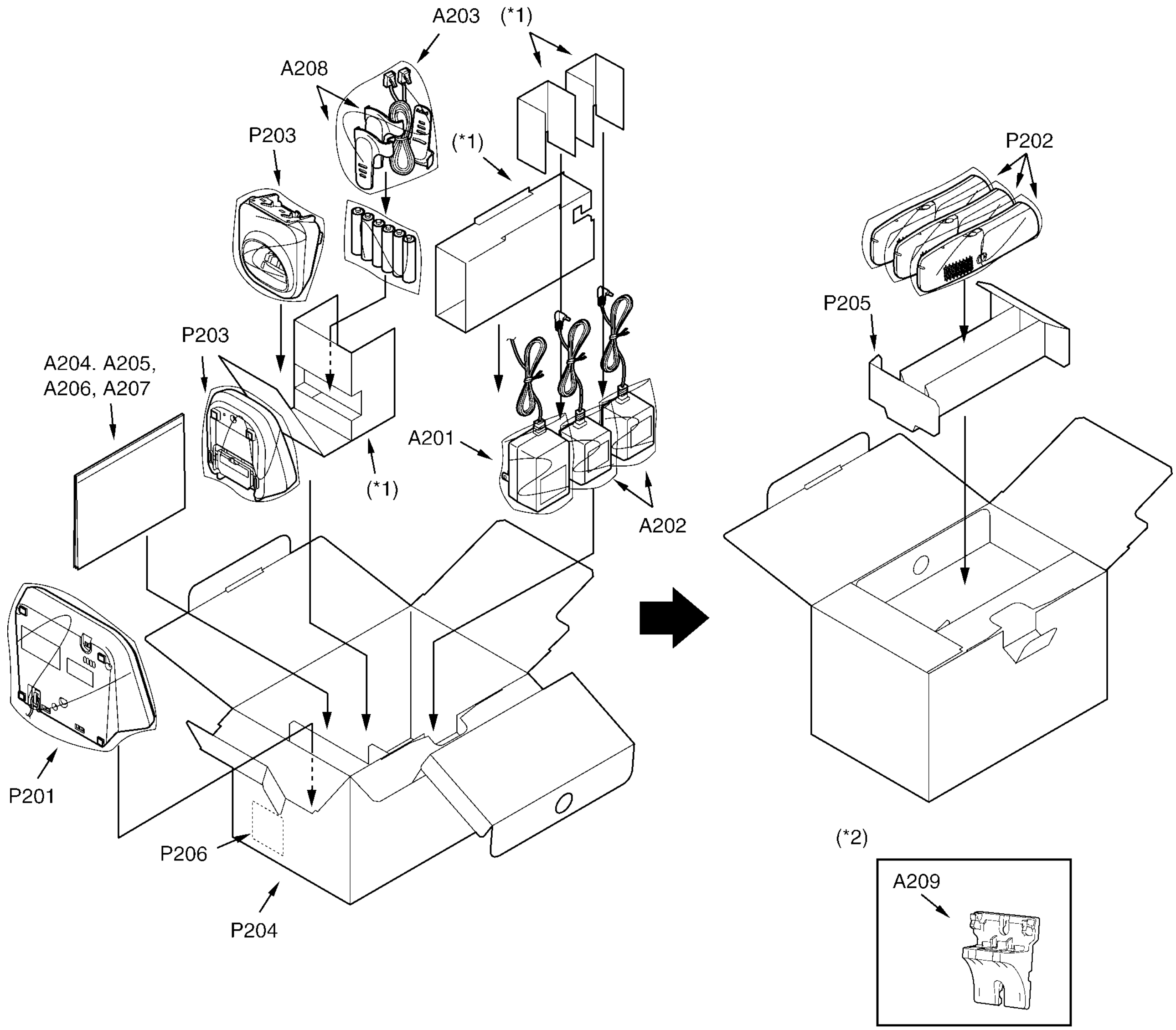
Model No. for A7 (WALL MOUNT) through sales route of Panasonic is PNKL1001Z1 (Black metallic) and PNKL1001Z2 (Pearl silver).

16.4.2. KX-TG9342T



Note:
(*1) Theis pad is piece of Ref No. P104 (GIFT BOX).
(*2) Optional Accessories
Model No. for A109 (WALL MOUNT) through sales route of Panasonic is PNKL1001Z1 (Black metallic) and PNKL1001Z2 (Pearl silver).

16.4.3. KX-TG9343S/T



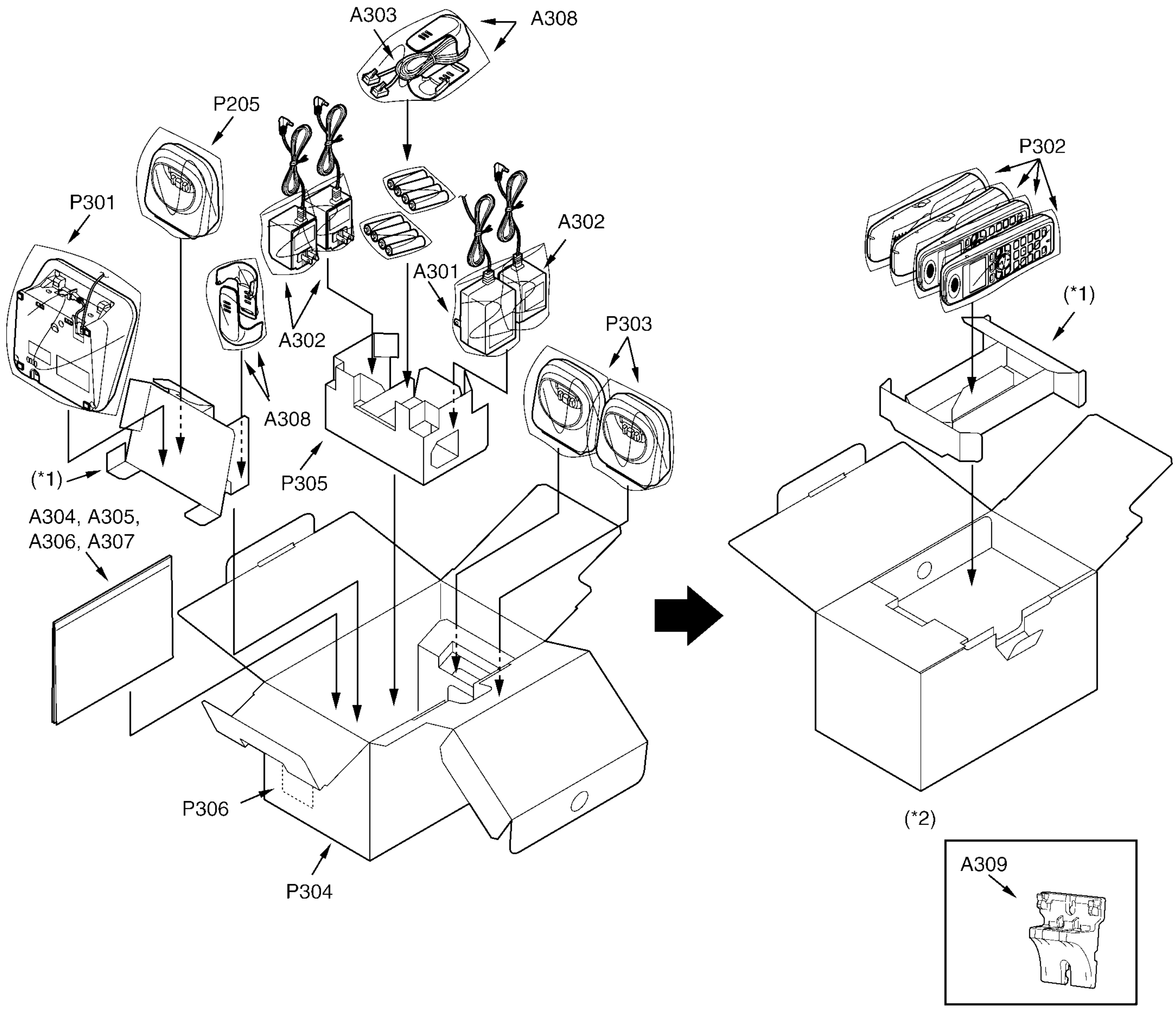
Note:

(*1) These pads are pieces of Ref No. P204 (GIFT BOX).

(*2) Optional Accessories

Model No. for A209 (WALL MOUNT) through sales route of Panasonic is PNKL1001Z1 (Black metallic) and PNKL1001Z2 (Pearl silver).

16.4.4. KX-TG9344T



Note:

(*1) These pads are pieces of Ref No. P305 (CUSHION).

(*2) Optional Accessories

Model No. for A309 (WALL MOUNT) through sales route of Panasonic is PNKL1001Z1 (Black metallic) and PNKL1001Z2 (Pearl silver).

16.5. Replacement Parts List

1. RTL (Retention Time Limited)
   Note:
   The “RTL” marking indicates that its Retention Time is Limited.
   When production is discontinued, this item will continue to be available only for a specific period of time. This period of time depends on the type of item, and the local laws governing parts and product retention. At the end of this period, the item will no longer be available.
2. Important safety notice
   Components identified by the ⚠ mark indicates special characteristics important for safety. When replacing any of these components, only use specified manufacture's parts.
3. The S mark means the part is one of some identical parts. For that reason, it may be different from the installed part.
4. ISO code (Example: ABS-94HB) of the remarks column shows quality of the material and a flame resisting grade about plastics.
5. RESISTORS & CAPACITORS
   Unless otherwise specified;
   All resistors are in ohms (Ω) k=1000Ω, M=1000kΩ
   All capacitors are in MICRO FARADS (μF) p=μμF
   *Type & Wattage of Resistor

Type

ERC:Solid	ERX:Metal Film	PQ4R:Chip
ERDS:Carbon	ERG:Metal Oxide	ERS:Fusible Resistor
ERJ:Chip	ER0:Metal Film	ERF:Cement Resistor

Wattage

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage Of Capacitor
Type

ECFD:Semi-Conductor	ECCD,ECKD,ECBT,F1K,ECUV:Ceramic
ECQS:Styrol	ECQE,ECQV,ECQG:Polyester
ECUV,PQCUV, ECUE:Chip	ECEA,ECST,EEE:Electlytic
ECQMS:Mica	ECQP:Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H:50V	05:50V	0F:3.15V	0J :6.3V	1V :35V
2A:100V	1:100V	1A:10V	1A :10V	50,1H:50V
2E:250V	2:200V	1V:35V	1C :16V	1J :16V
2H:500V		0J:6.3V	1E,25:25V	2A :100V

16.5.1. Base Unit

16.5.1.1. Cabinet and Electrical Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	1	PNKM1008Y2	CABINET BODY (for KX-TG9343S)	PS-HB
	1	PNKM1008Y1	CABINET BODY (for KX-TG9341T) (for KX-TG9342T) (for KX-TG9343T),(for KX-TG9344T)	PS-HB
	2	L0AA04A00028	SPEAKER	
	3	PQHR11082Z	GUIDE, SPEAKER	PS-HB
	4	PNKE1001Y1	CASE, CHARGE TERMINAL (for KX-TG9343S)	PS-HB
	4	PNKE1001Y3	CASE, CHARGE TERMINAL (for KX-TG9341T) (for KX-TG9342T) (for KX-TG9343T),(for KX-TG9344T)	PS-HB
	5	PNJT1003Z	CHARGE TERMINAL	
	6	PNBC1004Y1	BUTTON, ANSWER ON	ABS-HB
	7	PNBC1005Y1	BUTTON, ERASE	ABS-HB
	8	PNBC1006Y1	BUTTON, STOP	ABS-HB
	9	PNBC1007Y1	BUTTON, LOCATOR	ABS-HB
	10	PNBC1002Z1	BUTTON, NAVIGATOR KEY (for KX-TG9343S)	ABS-HB
	10	PNBC1002Z2	BUTTON, NAVIGATOR KEY (for KX-TG9341T) (for KX-TG9342T) (for KX-TG9343T),(for KX-TG9344T)	ABS-HB
	11	PNHR1001Z	GUIDE, BUTTON	PS-HB
	12	PNBC1001Z1	BUTTON, MESSAGE (for KX-TG9343S)	AS-HB
	12	PNBC1001Z2	BUTTON, MESSAGE (for KX-TG9341T) (for KX-TG9342T) (for KX-TG9343T),(for KX-TG9344T)	AS-HB
	13	PNJK1009Y	KEYBOARD SWITCH (for KX-TG9343S)	
	13	PNJK1009Z	KEYBOARD SWITCH (for KX-TG9341T) (for KX-TG9342T) (for KX-TG9343T),(for KX-TG9344T)	
	14	PNJK1010Y	KEYBOARD SWITCH (for KX-TG9343S)	
	14	PNJK1010Z	KEYBOARD SWITCH (for KX-TG9341T) (for KX-TG9342T) (for KX-TG9343T),(for KX-TG9344T)	
	15	PNHR1008Z	PLASTIC PARTS, JACK HOLDER	PS-HB
	16	K2ECYZ000001	JACK, DC	
	17	PQJJ1T039Y	JACK, MODULAR	
	18	PNLA1004Z	ANTENNA	
	19	PQMG10025W	RUBBER PARTS, MIC	
	20	PNKF1008Z2	CABINET COVER (for KX-TG9343S)	PS-HB
	20	PNKF1008Z1	CABINET COVER (for KX-TG9341T) (for KX-TG9342T) (for KX-TG9343T),(for KX-TG9344T)	PS-HB
	21	PQHA10023Z	RUBBER PARTS, FOOT CUSHION	
	22	PNGT1009Y	NAME PLATE (for KX-TG9343S)	
	22	PNGT1009Z	NAME PLATE (for KX-TG9341T) (for KX-TG9342T) (for KX-TG9343T),(for KX-TG9344T)	
	23	PQXDZLDRS1	MAGNET ELECTRIC TRANSDUCER, SECURITY TAG	
	24	PQHG10756Z	RUBBER PARTS	
	25	PQHS10722Y	SPACER	

16.5.1.2. Main P.C. Board Parts

Note:
(*1) When you have replaced IC501, IC601 or X501, make adjustments. Refer to **Check and Adjust Frequency (Base Unit)** (P.74).
(*2) When replacing IC701, refer to **How to Replace the LLP (Leadless Leadframe Package) IC** (P.65).

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB1	PNWPTG9341TH	MAIN P.C.BOARD ASS'Y (RTL)	
			(ICs)	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	IC300	C0DBAGZ00023	IC	S
	IC331	C0DBFGD00017	IC	
	IC501	C2HBBY000094	IC (*1)	
	IC601	PNWITG9341TH	IC (*1)	
	IC701	C1CB00002852	IC (*2)	
	IC741	C0CBABE00029	IC	
			(TRANSISTORS)	
	Q111	2SC6054JSL	TRANSISTOR(SI)	
	Q141	B1ACGP000008	TRANSISTOR(SI)	
	Q142	PQVTBF822T7	TRANSISTOR(SI)	
	Q161	2SD0874AS	TRANSISTOR(SI)	
	Q171	2SC6054JSL	TRANSISTOR(SI)	
	Q300	B1ZBZ0000065	TRANSISTOR(SI)	
	Q361	2SB1218A	TRANSISTOR(SI)	
	Q362	UNR92A2J0L	TRANSISTOR(SI)	
	Q382	B1ADGE000004	TRANSISTOR(SI)	
			(DIODES)	
	D101	PQVDMD5S	DIODE(SI)	
	D113	MA111	DIODE(SI)	S
	D133	MA111	DIODE(SI)	S
	D143	MANV250GEL	DIODE(SI)	
	D153	MA111	DIODE(SI)	S
	D301	B0JCME000035	DIODE(SI)	
	D361	MA8220	DIODE(SI)	S
	D362	B0ECKM000008	DIODE(SI)	
	D472	MAZ805100L	DIODE(SI)	
	D473	MAZ805100L	DIODE(SI)	
	D771	B0DDCL000001	DIODE(SI)	
	D781	B0DDCL000001	DIODE(SI)	
			(COILS)	
	L101	PQLQXF330K	COIL	S
	L102	PQLQXF330K	COIL	S
	L300	G1C220M00037	COIL	S
	L361	G1C6R8MA0072	COIL	
	L362	G1CR47J00005	COIL	
	L371	G1C6R8MA0072	COIL	
	L474	G1C6R8MA0072	COIL	
	L475	G1C6R8MA0072	COIL	
	L721	G1C1R0KA0096	COIL	
	L791	MQLRF3N9ZFB	COIL	
	L795	MQLRF3N9ZFB	COIL	
			(COMPONENTS PARTS)	
	RA451	D1H422220001	RESISTOR ARRAY	
	RA452	D1H427220001	RESISTOR ARRAY	
	RA501	D1H84724A013	RESISTOR ARRAY	S
			(VARISTORS)	
	SA102	PQVDDSS301L	VARISTOR (SURGE ABSORBER)	S
	SA103	PQVDDSS301L	VARISTOR (SURGE ABSORBER)	S
			(RESISTORS)	
	R111	PQ4R10XJ104	100k	S
	R112	PQ4R10XJ104	100k	S
	R113	ERJ3GEYJ103	10k	
	R114	ERJ3GEYJ473	47k	
	R121	ERJ3GEYJ394	390k	
	R122	ERJ3GEYJ394	390k	
	R131	PQ4R18XJ106	10M	S
	R133	ERJ3GEYJ105	1M	
	R134	ERJ3GEYJ102	1k	
	R141	ERJ3GEYJ104	100k	
	R142	PQ4R18XJ272	2.7k	S
	R145	ERJ2GEJ222	2.2k	
	R151	ERJ3GEYJ106	10M	
	R152	ERJ3GEYJ335	3.3M	
	R154	ERJ3GEYJ102	1k	
	R160	ERJ3GEYJ820	82	
	R161	ERJ3GEYJ104	100k	
	R162	ERJ3GEYJ473	47k	
	R163	ERJ12YJ120	12	
	R164	ERJ3GEYJ272	2.7k	
	R165	ERJ3GEYJ273	27k	
	R167	ERJ12YJ270	27	
	R168	ERJ3GEYJ821	820	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R171	ERJ2GEJ220	22	
	R172	ERJ3GEYJ104	100k	
	R175	ERJ3GEYJ561	560	
	R176	ERJ2GEJ101	100	
	R178	ERJ2GEJ102	1k	
	R181	ERJ2GEJ391	390	
	R182	ERJ2GEJ560X	56	
	R303	ERJ3GEYJ221	220	
	R304	ERJ3GEYJ221	220	
	R308	ERJ3GEYJ121	120	
	R361	ERJ3GEYJ332	3.3k	
	R364	ERJ3GEYJ103	10k	
	R365	ERJ3GEYJ102	1k	
	R372	ERX2SJ6R8	6.8	
	R421	ERJ3GEYJ473	47k	
	R422	ERJ2GEJ102	1k	
	R509	ERJ3GEYJ105	1M	
	R533	ERJ2GEJ472X	4.7k	
	R671	ERJ2GEJ331	330	
	R672	ERJ2GEJ221	220	
	R673	ERJ3GEYJ181	180	
	R674	ERJ2GEJ271	270	
	R731	ERJ2GEJ101	100	
	R732	ERJ2GEJ101	100	
	R736	ERJ2GEJ391	390	
	R771	ERJ2GEJ561	560	
	R772	ERJ2GEJ561	560	
	R781	ERJ2GEJ561	560	
	R782	ERJ2GEJ561	560	
	L501	ERJ6GEY0R00	0	
			(CAPACITORS)	
	C101	F1B2H681A070	680p	
	C102	F1B2H681A070	680p	
	C111	F1J2A473A024	0.047	
	C112	F1J2A473A024	0.047	
	C113	PQCUV1A684KB	0.68	
	C120	ECUE1H102KBQ	0.001	
	C121	F1K2H681A008	680p	
	C122	F1K2H681A008	680p	
	C132	ECUV1H103KBV	0.01	
	C142	ECUV1H103KBV	0.01	
	C152	ECUV1H103KBV	0.01	
	C161	EEE1EA100WR	10	
	C163	ECUV1H100DCV	10p	
	C168	PQCUV1A225KB	2.2	
	C172	ECUE1H102KBQ	0.001	
	C173	ECUV1A224KBV	0.22	
	C176	PQCUV0J106KB	10	
	C178	ECUE1C223KBQ	0.022	
	C181	ECUE1A104KBQ	0.1	
	C184	ECUV1A105KBV	1	
	C300	PSEA1VXF470	47	S
	C304	ECUV1A105KBV	1	
	C305	ECUV1H103KBV	0.01	
	C306	ECEA1CKS101	100	S
	C308	ECUV1E104KBV	0.1	
	C331	ECUV1A474KBV	0.47	
	C341	ECEA0JK331	330	S
	C342	ECUV0J105KBV	1	
	C352	ECUE1A104KBQ	0.1	
	C361	ECUE1H102KBQ	0.001	
	C381	ECUV1A105KBV	1	
	C382	PQCUV0J106KB	10	
	C422	ECUE1A104KBQ	0.1	
	C452	ECUE1A104KBQ	0.1	
	C454	ECUE1H100DCQ	10p	
	C455	ECUE1H100DCQ	10p	
	C457	ECUE1C333KBQ	0.033	
	C458	ECUE1C333KBQ	0.033	
	C459	ECUE1H102KBQ	0.001	
	C472	ECUE1H100DCQ	10p	
	C473	ECUE1H100DCQ	10p	
	C475	ECUE1H102KBQ	0.001	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C501	ECUE1A104KBQ	0.1	
	C503	ECUE1A104KBQ	0.1	
	C504	ECUE1A104KBQ	0.1	
	C508	ECUE1H6R0CCQ	6p	
	C509	ECUE1H6R0CCQ	6p	
	C513	ECUE1A104KBQ	0.1	
	C514	PQCUV0J106KB	10	
	C515	ECUV0J105KBV	1	
	C516	PQCUV0J106KB	10	
	C517	ECUE1A104KBQ	0.1	
	C518	PQCUV0J106KB	10	
	C521	ECUE1A104KBQ	0.1	
	C531	ECUE1A104KBQ	0.1	
	C601	ECUE1A104KBQ	0.1	
	C660	ECUE1A104KBQ	0.1	
	C701	ECUE1H100DCQ	10p	
	C702	ECUE1A104KBQ	0.1	
	C703	ECUE1H100DCQ	10p	
	C704	ECUV1A225KB	2.2	
	C705	ECUE1H100DCQ	10p	
	C706	ECUE1A104KBQ	0.1	
	C707	ECUE1H100DCQ	10p	
	C708	ECUV1A105KBV	1	
	C710	ECUE1A104KBQ	0.1	
	C711	ECUE1H100DCQ	10p	
	C712	ECUE1A104KBQ	0.1	
	C714	ECUE0J105KBQ	1	
	C715	ECUE1A104KBQ	0.1	
	C721	ECUE1H101JCQ	100p	
	C722	ECUE1H121JCQ	120p	
	C737	ECUE1C103KBQ	0.01	
	C738	ECUE1H100DCQ	10p	
	C742	ECUV1A474KBV	0.47	
	C743	ECUV1A105KBV	1	
	C751	F1G1H3R3A562	3.3p	
	C752	ECUE1H100DCQ	10p	
	C753	ECUE1H1R0BCQ	1	
	C754	ECUE1A104KBQ	0.1	
	C755	F1G1H1R2A561	1.2p	
	C763	F1G1HR70A561	0.7p	
	C765	ECUE1H100DCQ	10p	
	C771	ECUE1H100DCQ	10p	
	C772	ECUE1H330JCQ	33p	
	C773	ECUE1H100DCQ	10p	
	C775	ECUE1H2R0BCQ	2p	
	C776	ECUE1H1R5BCQ	1.5p	
	C777	ECUE1H2R0BCQ	2p	
	C781	ECUE1H100DCQ	10p	
	C782	ECUE1H100DCQ	10p	
	C791	ECUE1H1R0BCQ	1	
	C792	ECUE1H1R0BCQ	1	
	C793	ECUE1H100DCQ	10p	
	C795	ECUE1H1R0BCQ	1	
	C796	ECUE1H1R0BCQ	1	
	C797	ECUE1H100DCQ	10p	
			(OTHERS)	
	MIC1	L0CBAY000016	MICROPHONE	
	E1	PNMC1002Z	MAGNETIC SHIELD, CASE	
	E2	PNWHK06SS05N	LEAD WIRE, PARALLEL WIRE	
	E3	PNWHK10SS05N	LEAD WIRE, PARALLEL WIRE	
	P101	PFRT002	THERMISTOR (POSISTOR)	S
	F301	K5H302Y00003	FUSE	
	X501	H0J138500010	CRYSTAL OSCILLATOR (*1)	S

16.5.1.3. Operational P.C. Board Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB2	PNLP1014Z	OPERATIONAL P.C.BOARD ASS'Y (RTL)	
			(DIODES)	
	LED901	PQVDBR1111C	LED	S
	LED902	PQVDBR1111C	LED	S
	LED903	LNJ308G8JRA	LED	S
	LED904	PQVDBR1111C	LED	S

16.5.2. Handset

16.5.2.1. Cabinet and Electrical Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	101	PNGP1002Y2	PANEL, LCD (for KX-TGA931S)	AS-HB
	101	PNGP1002Z1	PANEL, LCD (for KX-TGA931T)	AS-HB
	102	PNHS1002Z	TAPE, DOUBLE SIDED	
	103	PNKM1006Y2	CABINET BODY (for KX-TGA931S)	PS-HB
	103	PNKM1006Y1	CABINET BODY (for KX-TGA931T)	PS-HB
	104	PNHR1005Z	OPTIC CONDUCTIVE PARTS, LED LENS	PS-HB
	105	PNGT1014Y	NAME PLATE (for KX-TGA931S)	
	105	PNGT1014Z	NAME PLATE (for KX-TGA931T)	
	106	PNHS1001Z	SPACER, RECEIVER NET	
	107	L0AD02A00041	RECEIVER	
	108	PQHG10756Z	RUBBER PARTS, RECEIVER	
	109	PQHS10722Y	SPACER, CUSHION LCD	
	110	PNBC1008Y1	BUTTON, TALK	ABS-HB
	111	PNBC1009Y1	BUTTON, OFF	ABS-HB
	112	PNBC1010Y1	BUTTON, SP	ABS-HB
	113	PNBC1011Y1	BUTTON, PAUSE	ABS-HB
	114	PNBC1003Z1	BUTTON, NAVIGATOR KEY (for KX-TGA931S)	ABS-HB
	114	PNBC1003Z2	BUTTON, NAVIGATOR KEY (for KX-TGA931T)	ABS-HB
	115	PNJK1006X	KEYBOARD SWITCH (for KX-TGA931S)	
	115	PNJK1006Z	KEYBOARD SWITCH (for KX-TGA931T)	
	116	PNHX1036Z	COVER, LCD SHEET	
	117	PNLA1005Z	ANTENNA	
	118	PNJT1002Z	CHARGE TERMINAL (R)	
	119	PNJT1001Z	CHARGE TERMINAL (L)	
	120	PQHR11313Z	GUIDE, SPEAKER	ABS-HB
	121	PQHG10729Z	RUBBER PARTS, SPEAKER	
	122	L0AD02A00026	SPEAKER	
	123	PQHS10622Z	SPACER, SPEAKER NET	
	124	PQJC10056X	BATTERY TERMINAL	
	125	PNKE1002Z1	COVER, EP CAP (for KX-TGA931S)	
	125	PNKE1002Z2	COVER, EP CAP (for KX-TGA931T)	
	126	PNKF1006Z2	CABINET COVER (for KX-TGA931S)	ABS-HB
	126	PNKF1006Z1	CABINET COVER (for KX-TGA931T)	ABS-HB
	127	PQQT23182Z	LABEL, ATTENTION	
	128	PNQT1057Z	LABEL, BATTERY	
	129	PQHS10792Z	SPACER, BATTERY	
	130	PNKK1001Z1	LID, BATTERY COVER (for KX-TGA931S)	ABS-HB
	130	PNKK1001Z2	LID, BATTERY COVER (for KX-TGA931T)	ABS-HB
	131	PNYNTGA931SR	LID, BATTERY COVER ASS'Y (for KX-TGA931S)	ABS-HB
	131	PNYNTGA430BR	LID, BATTERY COVER ASS'Y (for KX-TGA931T)	ABS-HB

16.5.2.2. Main P.C. Board Parts

Note:

(*1) When you have replaced IC501, IC541 or X501, make adjustments. Refer to **Check and Adjust Frequency (Handset)** (P.74) and **Adjust Battery Low Detector Voltage (Handset)** (P.74).

(*2) When replacing IC701, refer to **How to Replace the LLP (Leadless Leadframe Package) IC** (P.65).
(*3) When replacing the handset LCD, See **How to Replace the Handset LCD** (P.72).

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB100	PNWPTGA931TR	MAIN P.C.BOARD ASS'Y (RTL)	
			(ICs)	
	IC371	C0DBGYY00297	IC	
	IC373	C0DBAYY00067	IC	
	IC374	C0EBD0000355	IC	
	IC501	C2HBBY000097	IC (*1)	
	IC541	PNWITGA931TR	IC (*1)	
	IC561	C0DBZHA00012	IC	
	IC701	C1CB00002852	IC (*2)	
	IC741	C0CBCAC00252	IC	
			(TRANSISTORS)	
	Q361	B1ADGE000004	TRANSISTOR(SI)	
	Q362	2SC6054JSL	TRANSISTOR(SI)	
	Q364	2SC6054JSL	TRANSISTOR(SI)	
	Q531	UNR921EJ0L	TRANSISTOR(SI)	
	Q543	UNR9215J0L	TRANSISTOR(SI)	
	Q561	UNR921MJ0L	TRANSISTOR(SI)	
	Q562	UNR921MJ0L	TRANSISTOR(SI)	
	IC372	MTM767200LBF	TRANSISTOR(SI)	
			(DIODES)	
	D361	MA2ZD0200L	DIODE(SI)	
	D364	MA8043L	DIODE(SI)	S
	D771	B0DDCL000001	DIODE(SI)	
	D781	B0DDCL000001	DIODE(SI)	
	LED551	B3ACB0000190	LED	
	LED552	B3ACB0000190	LED	
	LED553	B3ACB0000190	LED	
	LED554	B3ACB0000190	LED	
	LED561	B3ACB0000190	LED	
			(COILS)	
	L373	G1C100MA0283	COIL	
	L434	PQLQR2KB113T	COIL	S
	L721	G1C1R0KA0096	COIL	
	L791	MQLRF5N6ZFB	COIL	
	L795	MQLRF5N6ZFB	COIL	
	F301	PQLQR2M5N6K	COIL	S
			(VARISTORS)	
	D412	D4ED1180A013	VARISTOR	
	D413	D4ED1180A013	VARISTOR	
	D423	D4ED1180A013	VARISTOR	
	D424	D4ED1180A013	VARISTOR	
	D426	D4ED1180A013	VARISTOR	
	D427	D4ED1180A013	VARISTOR	
			(COMPONENTS PARTS)	
	RA401	D1H410220001	RESISTOR ARRAY	
	RA402	D1H422220001	RESISTOR ARRAY	
	RA403	D1H468020001	RESISTOR ARRAY	
	RA501	D1H84724A013	RESISTOR ARRAY	S
	RA551	D1H83314A013	RESISTOR ARRAY	S
			(RESISTORS)	
	R361	ERJ2GEJ473	47k	
	R362	ERJ2GEJ561	560	
	R363	ERJ2GEJ473	47k	
	R366	ERJ3GEYJ332	3.3k	
	R367	ERJ2GEJ121	120	
	R368	ERJ2GEJ103	10k	
	R369	ERJ2GEJ333	33k	
	R370	ERJ8GEYJ1R2	1.2	
	R374	ERJ2GEJ224	220k	
	R376	ERJ2GEJ105X	1M	
	R377	ERJ2GEJ225	2.2M	
	R378	ERJ2GEJ105X	1M	
	R379	ERJ2GEJ225	2.2M	
	R417	ERJ2GEJ391	390	
	R433	ERJ2GEJ102	1k	
	R434	ERJ2GEJ222	2.2k	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	R436	ERJ2GEJ102	1k	
	R437	ERJ2GEJ104	100k	
	R501	ERJ3GEYJ105	1M	
	R508	ERJ3GEYJ100	10	
	R509	ERJ2GEJ104	100k	
	R526	ERJ2GEJ333	33k	
	R534	ERJ2GEJ103	10k	
	R541	ERJ2GEJ103	10k	
	R542	ERJ2GEJ222	2.2k	
	R543	ERJ2GEJ274	270k	
	R561	ERJ2GEJ101	100	
	R564	ERJ3GEYJ101	100	
	R572	D1BB4303A055	430k	
	R573	D1BB8203A055	820k	
	R731	ERJ2GEJ101	100	
	R732	ERJ2GEJ101	100	
	R736	ERJ2GEJ391	390	
	R771	ERJ2GEJ561	560	
	R772	ERJ2GEJ561	560	
	R781	ERJ2GEJ561	560	
	R782	ERJ2GEJ561	560	
			(CAPACITORS)	
	C361	F2A0J3310067	330	
	C362	ECUE1A104KBQ	0.1	
	C363	ECUE1A104KBQ	0.1	
	C366	ECUE1A104KBQ	0.1	
	C371	ECUV0J105KBV	1	
	C372	ECUV0J105KBV	1	
	C373	F2A0J3310068	330	
	C374	ECUE1A104KBQ	0.1	
	C377	ECUE1A104KBQ	0.1	
	C379	ECUE1A104KBQ	0.1	
	C386	ECUE1A104KBQ	0.1	
	C414	ECUE1E682KBQ	0.0068	
	C415	ECUE1E682KBQ	0.0068	
	C416	ECUE1E562KBQ	0.0056	
	C417	PQCUV0J106KB	10	
	C421	ECUV0J105KBV	1	
	C426	ECUE1H100DCQ	10p	
	C427	ECUE1H100DCQ	10p	
	C433	ECUE1E682KBQ	0.0068	
	C434	ECUE1H100DCQ	10p	
	C435	PQCUV0J106KB	10	
	C501	ECUE1H100DCQ	10p	
	C502	ECUE1H100DCQ	10p	
	C503	ECUE0J105KBQ	1	
	C504	ECUE1A104KBQ	0.1	
	C506	ECUE1A104KBQ	0.1	
	C508	PQCUV0J106KB	10	
	C510	ECUE0J105KBQ	1	
	C512	ECUE1C103KBQ	0.01	
	C514	PQCUV0J106KB	10	
	C515	ECUE1A104KBQ	0.1	
	C526	ECUE1A104KBQ	0.1	
	C531	ECUE1A104KBQ	0.1	
	C532	ECUE1H100DCQ	10p	
	C533	ECUE1H100DCQ	10p	
	C540	ECUE1A104KBQ	0.1	
	C541	ECUE1A104KBQ	0.1	
	C542	ECUE1H101JCQ	100p	
	C544	ECUE1A104KBQ	0.1	
	C562	ECUV1A105KBV	1	
	C564	ECUV1C104KBV	0.1	
	C565	ECUV0J105KBV	1	
	C570	ECUV1C474KBV	0.47	
	C571	ECUV1C474KBV	0.47	
	C572	ECUV1C474KBV	0.47	
	C573	ECUV1C104KBV	0.1	
	C596	ECUE1A104KBQ	0.1	
	C701	ECUE1H100DCQ	10p	
	C702	ECUE1A104KBQ	0.1	
	C703	ECUE1H100DCQ	10p	
	C704	ECUV1A225KB	2.2	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	C705	ECUE1H100DCQ	10p	
	C706	ECUE1A104KBQ	0.1	
	C707	ECUE1H100DCQ	10p	
	C708	ECUV1A105KBV	1	
	C710	ECUE1A104KBQ	0.1	
	C711	ECUE1H100DCQ	10p	
	C712	ECUE1A104KBQ	0.1	
	C714	ECUE0J105KBQ	1	
	C715	ECUE1A104KBQ	0.1	
	C721	ECUE1H101JCQ	100p	
	C722	ECUE1H121JCQ	120p	
	C737	ECUE1C103KBQ	0.01	
	C738	ECUE1H100DCQ	10p	
	C742	ECUV1A474KBV	0.47	
	C743	ECUV1A105KBV	1	
	C751	F1G1H3R3A562	3.3p	
	C752	ECUE1H100DCQ	10p	
	C753	ECUE1H1R0BCQ	1p	
	C754	ECUE1A104KBQ	0.1	
	C755	F1G1H1R2A561	1.2p	
	C763	F1G1HR70A561	0.7p	
	C765	ECUE1H100DCQ	10p	
	C771	ECUE1H100DCQ	10p	
	C772	ECUE1H330JCQ	33p	
	C773	ECUE1H100DCQ	10p	
	C775	ECUE1H2R0BCQ	2p	
	C776	ECUE1H1R5BCQ	1.5p	
	C777	ECUE1H2R0BCQ	2p	
	C781	ECUE1H100DCQ	10p	
	C782	ECUE1H100DCQ	10p	
	C793	F1G1H3R3A562	3.3p	
	C797	F1G1H3R3A562	3.3p	
			(OTHERS)	
	MIC100	L0CBAY000018	MICROPHONE	
	E101	L5DCBYY00020	LIQUID CRYSTAL DISPLAY (*3)	
	E102	PQHR11279Z	TRANSPARENT PLATE, LCD PLATE	PMMA-HB
	E103	PNHR1006Z	GUIDE, LCD	ABS-HB
	E104	PNHX1004Z	COVER, LCD COVER SHEET	
	E105	PQJE10179V	LEAD WIRE, FPC	
	E106	B3AFB0000211	LED	
	E107	PNMC1002Z	MAGNETIC SHIELD, CASE	
	E108	PQWE10050Z	BATTERY TERMINAL	ABS-HB
	CN431	K2HD103D0001	JACK	
	X501	H0J138500010	CRYSTAL OSCILLATOR (*1)	

16.5.3. Charger Unit

16.5.3.1. Cabinet and Electrical Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	200	PNLC1001YS	CHARGER UNIT ASS'Y (RTL) (for KX-TG9332S)	
	200	PNLC1001YT	CHARGER UNIT ASS'Y (RTL) (for KX-TG9332T) (for KX-TG9333T) (for KX-TG9334T)	
	200-1	PNKM1015Y3	CABINET BODY (for KX-TG9332S)	PS-HB
	200-1	PNKM1015Y2	CABINET BODY (for KX-TG9332T) (for KX-TG9333T) (for KX-TG9334T)	PS-HB
	200-2	PNJT1010Z	CHARGE TERMINAL	
	200-3	PNKF1012Z2	CABINET COVER (for KX-TG9332S)	PS-HB
	200-3	PNKF1012Z1	CABINET COVER (for KX-TG9332T) (for KX-TG9333T) (for KX-TG9334T)	PS-HB
	200-4	PQHA10023Z	RUBBER PARTS, FOOT CUSHION	
	200-5	PNGT1050Z	NAME PLATE (for KX-TG9332S)	
	200-5	PNGT1021Y	NAME PLATE (for KX-TG9332T) (for KX-TG9333T) (for KX-TG9334T)	

16.5.3.2. Main P.C. Board Parts

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	PCB200	PQWPTGA721CH	MAIN P.C.BOARD ASS'Y (RTL)	
			(DIODE)	
	D1	B0JAME000095	DIODE(SI)	
			(JACK)	
	J1	K2ECYB000001	JACK	
			(RESISTOR)	
	R1	ERG2SJ100E	10	
			(FUSE)	
	F1	K5H302Y00003	FUSE	

16.5.4. Accessories and Packing Materials

Note:

(*1) You can download and refer to the Operating Instructions (Instruction book) on TSN Server.

16.5.4.1. KX-TG9341T

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
⚠	A1	PQLV207T	AC ADAPTOR (for Base Unit)	
	A2	PQJA10075Z	CORD, TELEPHONE	
	A3	PNQX1005X	INSTRUCTION BOOK (*1)	
	A4	PNQW1005Z	LEAFLET, QUICK GUIDE (for English)	
	A5	PNQW1006Z	LEAFLET, QUICK GUIDE (for Spanish)	
	A6	PNKE1004Z1	HANGER, BELT CLIP	ABS-HB
	A7	PNKL1001Z1	STAND, WALL MOUNT (for Service,Black metallic)	SP-HB
	A7	PNKL1001Z2	STAND, WALL MOUNT (for Service,Perl Silver)	SP-HB
	P1	PQPP10152Z	PROTECTION COVER (for Base Unit)	
	P2	XZB08X25B02	PROTECTION COVER (for Handset)	
	P3	PNPK1015Z	GIFT BOX	
	P4	PQXDDS400-8	MAGNET ELECTRIC TRANSDUCER, SECURITY TAG	

16.5.4.2. KX-TG9342T

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
⚠	A101	PQLV207T	AC ADAPTOR (for Base Unit)	
⚠	A102	PQLV209T	AC ADAPTOR (for Charger Unit)	
	A103	PQJA10075Z	CORD, TELEPHONE	
	A104	PQQV10494Z	CARD, CCP	
	A105	PNQX1005X	INSTRUCTION BOOK (*1)	
	A106	PNQW1005Z	LEAFLET, QUICK GUIDE (for English)	
	A107	PNQW1006Z	LEAFLET, QUICK GUIDE (for Spanish)	
	A108	PNKE1004Z1	HANGER, BELT CLIP	ABS-HB
	A109	PNKL1001Z1	STAND, WALL MOUNT (for Service, Black metallic)	SP-HB
	A109	PNKL1001Z2	STAND, WALL MOUNT (for Service, Perl silver)	SP-HB
	P101	PQPP10152Z	PROTECTION COVER (for Base Unit)	
	P102	XZB08X25B02	PROTECTION COVER (for Handset)	

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	P103	XZB13X19C03	PROTECTION COVER (for Charger Unit)	
	P104	PNPK1016Z	GIFT BOX	
	P105	PQXDDS400-8	MAGNET ELECTRIC TRANS-DUCER, SECURITY TAG	

16.5.4.3. KX-TG9343S/T

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
⚠	A201	PQLV207T	AC ADAPTOR (for Base Unit)	
⚠	A202	PQLV209T	AC ADAPTOR (for Charger Unit)	
	A203	PQJA10075Z	CORD, TELEPHONE	
	A204	PNQX1005X	INSTRUCTION BOOK (*1)	
	A205	PNQW1005Z	LEAFLET, QUICK GUIDE (for English)	
	A206	PNQW1006Z	LEAFLET, QUICK GUIDE (for Spanish)	
	A207	PQQV10494Z	CARD, CCP	
	A208	PNKE1004Z2	HANGER, BELT CLIP (for KX-TG9343S)	ABS-HB
	A208	PNKE1004Z1	HANGER, BELT CLIP (for KX-TG9343T)	ABS-HB
	A209	PNKL1001Z1	STAND, WALL MOUNT (for Service,Black metallic)	SP-HB
	A209	PNKL1001Z2	STAND, WALL MOUNT (for Service,Perl silver)	SP-HB
	P201	PQPP10152Z	PROTECTION COVER (for Base Unit)	
	P202	XZB08X25B02	PROTECTION COVER (for Handset)	
	P203	XZB13X19C03	PROTECTION COVER (for Charger Unit)	
	P204	PNPK1072Z	GIFT BOX,(for KX-TG9343S)	
	P204	PNPK1017Z	GIFT BOX,(for KX-TG9343T)	
	P205	PNPD1006Z	CUSHION	
	P206	PQXDDS400-8	MAGNET ELECTRIC TRANS-DUCER, SECURITY TAG	

16.5.5. KX-TG9344T

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
⚠	A301	PQLV207T	AC ADAPTOR (for Base Unit)	
⚠	A302	PQLV209T	AC ADAPTOR (for Charger Unit)	
	A303	PQJA10075Z	CORD, TELEPHONE	
	A304	PNQX1005X	INSTRUCTION BOOK (*1)	
	A305	PNQW1005Z	LEAFLET, QUICK GUIDE (for English)	
	A306	PNQW1006Z	LEAFLET, QUICK GUIDE (for Spanish)	
	A307	PQQV10494Z	CARD, CCP	
	A308	PNKE1004Z1	HANGER, BELT CLIP	ABS-HB
	A309	PNKL1001Z1	STAND, WALL MOUNT (for Service, Black metallic)	SP-HB
	A309	PNKL1001Z2	TAND, WALL MOUNT (for Service, Perl silver)	SP-HB
	P301	PQPP10152Z	PROTECTION COVER (for Base Unit)	
	P302	XZB08X25B02	PROTECTION COVER (for Handset)	
	P303	XZB13X19C03	PROTECTION COVER (for Charger Unit)	
	P304	PNPK1018Z	GIFT BOX	
	P305	PNPD1007Z	CUSHION	
	P306	PQXDDS400-8	MAGNET ELECTRIC TRANS-DUCER, SECURITY TAG	

16.5.6. Screws

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
	A	XTB26+8GFJ	TAPPING SCREW	
	B	XTB2+8GFJ	TAPPING SCREW	

16.5.7. Fixtures and Tools

Note:

When replacing the Handset LCD, See **How to Replace the Handset LCD** (P.72).

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
		PQZZ430PIR	TIP OF SOLDERING IRON	
		PQZZ430PRB	RUBBER OF SOLDERING IRON	